
BIOLOGICAL ASSESSMENT

FOR

GRIZZLY BEAR AND CANADA
LYNX

Darby Lumber Lands Phase II Project

Darby Ranger District
Bitterroot National Forest

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Date

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Summary

This Biological Assessment (BA) analyzes the effects of implementing the Darby Lumber Lands Phase II Project Proposed Action (hereafter the Project), which is the maximum program of work proposed. Any potential modifications to the project would affect fewer acres or construct fewer miles of roads, and would therefore be less than those consulted on for the Proposed Action.

Implementation of the proposed federal action MAY AFFECT - IS NOT LIKELY TO ADVERSELY AFFECT the threatened grizzly bear and the threatened Canada lynx. Implementation of the proposed federal action would have NO EFFECT to designated Critical Habitat for the threatened grizzly bear or the threatened Canada lynx because no Critical Habitat for either species occurs within the project area or elsewhere on the Bitterroot National Forest.

Consultation History and Requirements

In accordance with the Endangered Species Act (ESA) and its implementation regulations and with FSM 2671.4, prior to the final decision on the proposed federal action the Bitterroot National Forest (BNF) is required to request written concurrence from the United States Fish and Wildlife Service (FWS) with respect to determinations of potential effects to the threatened grizzly bear and the threatened Canada lynx.

The Bitterroot National Forest (BNF) has a limited history of consultation with the U.S. Fish and Wildlife Service (USFWS) in regards to project effects to grizzly bears. Grizzly bears had not been present on the BNF for at least 30 years prior to the signing of the current Forest Plan in 1987 (USDA Forest Service 1987). The USFWS added grizzly bears to their List of Threatened, Endangered and Candidate Species That May Occur on the BNF east of Highway 93 on September 8, 2017 (USDI Fish and Wildlife Service 2017). This addition recognized that transitory bears were appearing in areas further away from recovery zones where they had not been sighted in decades and could potentially traverse portions of the BNF. The BNF subsequently consulted with USFWS on the effects to grizzly bears for the Meadow Vapor Project in May 2018. USFWS concurred with the BNF effects call of May Affect – Not Likely to Adversely Affect for the Meadow Vapor project on May 30, 2018.

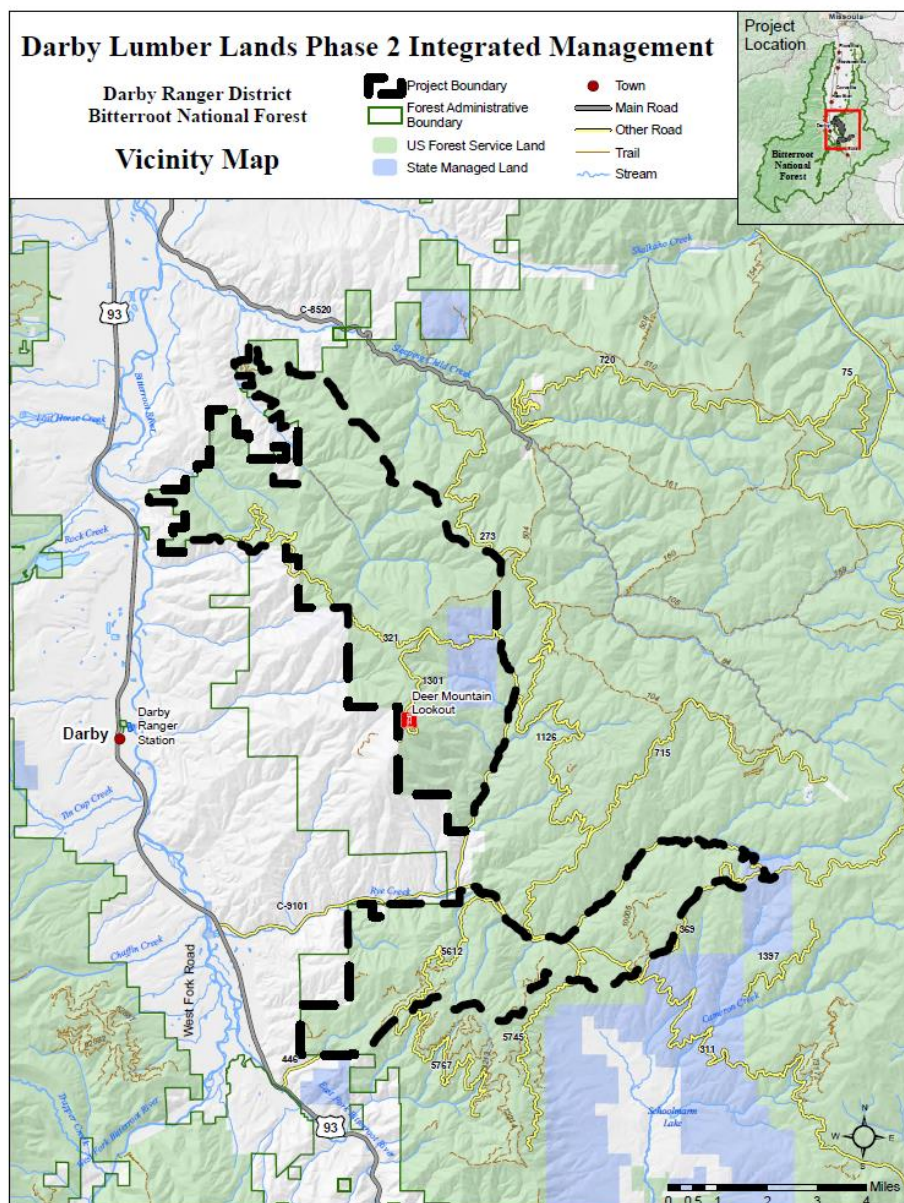
The BNF also has a limited history of consultation with USFWS in regards to project effects to Canada lynx. USFWS added lynx to their List of Threatened, Endangered and Candidate Species That May Occur on the BNF on July 2, 2013. The BNF consulted with USFWS on effects to lynx for the Bitterroot National Forest Travel Plan in August 2013. USFWS concurred with the BNF effects call of May Affect – Not Likely to Adversely Affect for the Travel Plan on September 6, 2013. The BNF consulted with USFWS on effects to lynx for the Three Saddle Vegetation Management Project in January 2014. USFWS concurred with the BNF effects call of May Affect – Not Likely to Adversely Affect for the Three Saddle project on February 1, 2014. The BNF consulted with USFWS on effects to lynx for the Darby Lumber Lands Watershed Improvement and Travel Management Project in May 2015. USFWS concurred with the BNF effects call of May Affect – Not Likely to Adversely Affect for the Darby Lumber Lands project on June 16, 2015.

The effects determination for yellow-billed cuckoo is No Effect. Suitable habitat for this species (riparian areas with cottonwoods and willows) does not occur in the project area, and the species appears to be an accidental vagrant in the Bitterroot drainage.

Analysis Area

The analysis area for this project is shown in Figure 2. It incorporates portions or all of 5 sub-watersheds (Bitterroot River – Lick Creek, Bitterroot River – Darby, Little Sleeping Child Creek, Lower Rye Creek, Upper Rye Creek, and East Fork Bitterroot River – Laird Creek). This area totals about 90,156 acres, and was used for assessment effects to grizzly bear and Canada lynx because it is contiguous, biologically significant, and encompasses the proposed treatment units and relevant cumulative effects.

Figure 1. Project Vicinity



Description of Proposed Action

The Bitterroot National Forest is proposing vegetation management, fuels reduction, and transportation system management in the project area described above and shown in Figure 1. This project is a continuation of the watershed improvement and transportation management work in Rye Creek completed in the first phase of the Darby Lumber Lands Watershed Improvement and Travel Management Project (Decision July, 2015).

Detailed maps of proposed vegetation management and transportation projects are located in Appendix 1.

Vegetation Management

- Commercial harvesting on about 1,274 acres of dry ponderosa pine sites. About 1,130 acres would be intermediate harvest, and 144 acres would be regeneration harvest (App.1 Map 1);
- Prescribed burning of all harvest units and a 20-acre open pine/grassland site (App. 1 Map 1);

Transportation System

Road Construction

The project includes building permanent and temporary roads needed to complete vegetation management activities. The minimum road system needed to complete harvest activities would be built but most roads would be closed to public access during and after the project. A portion of FSR 74985 on the Little Sleeping Child/Harlan Creek divide would be relocated, and the old road segment decommissioned. The new road segment would have the same travel status as the old road, which is currently open seasonally. About 4.3 miles of permanent specified road and 8 miles of temporary road would be built along with tracked line machine trails and constructed skid trails. An access road across private land would be improved prior to log haul. Temporary roads, tracked line machine trails and skid trails would be re-contoured and revegetated after use. Of the new permanent road constructed, only the FSR 74985 relocation segment would be open to the public after or during the vegetation management activities; this road is currently open for public motorized use on a seasonal basis and would be managed the same way after the project.

Access Management

- Change access on specific existing roads and trails. Several currently closed roads would be opened for OHVs < 50" in width, and combined with connector trails (number 6, below) to provide recreational access.
- Change approximately 1,900' (0.36 mi.) of trail TR504 (Rye Creek-Hot Springs Trail), in S35, T4N, R20W from TR-3, single track motorized, to TR-3, OHV <50" in width, to allow this class of vehicle access from where FSR 73985 crosses TR504 to the top of Cold Spring Hill. Minor blading

and new drainage features would be needed. The remaining portion of TR504 would remain single track as designated in the 2016 Travel Management Planning decision.

- Open currently stored roads FSR 73975, 73982 and 73985 to provide OHV <50" routes.
- Closing, opening, or changing season of use or allowable vehicle class to meet the purpose and need for managing the transportation system;
- Decommissioning approximately 39 miles of existing road prism that are no longer needed for management activities, recreation, or other uses. Several of the currently open road segments listed for closure in Table 2 are also decommissioning candidates. These decommissioned roads would be removed from the system and treated, as appropriate, to improve soil and watershed conditions. Decommissioning and storage candidates with substantial natural recovery and negligible erosion risk may receive minimal or no treatment. Where required, the proposed treatments for decommissioned and stored roads may include soil decompaction, culvert removal, full and partial re-contouring and revegetation treatments. Unless natural recovery has made the roads inaccessible to motorized vehicles, the entrances of the roads will be physically blocked with a gate, earthen berm, rock barrier, or the first 50 to 100 feet will be recontoured.
- Storing approximately 16 miles of existing roads not needed for short-term management but are needed long-term to support Forest Plan direction, most specifically for timber management. Prior to storage, these roads will be stored and will be treated as necessary to ensure hydrologic stability. They will not be available for motorized access when in storage.
- TR164 (Little Sleeping Child) will be removed from the trail system.
- Building five new OHV (<50" in width) connector trails, totaling about 1.9 miles in the upper Little Sleeping Child/Lairdon Gulch area (App. 1 Map 2a). Proposed new connector trail activities would include chainsaw clearing of downed trees, blading a tread sufficient for OHV (<50" in width) and establishing water drainage features where needed.

Design Feature Pertinent to Grizzly Bears

Personnel officially participating with the activities associated with this project will confine food and other bear attractants, for personal or official use, within certified bear resistant containers for all activities.

Species Assessment – Grizzly Bear

Current Status on the Bitterroot National Forest

The grizzly bear was first listed as threatened under ESA in 1975 (USDI Fish and Wildlife Service 1993). The USFWS added grizzly bear to their list of threatened, endangered and candidate species that may be present on the BNF east of Highway 93 on September 8, 2017 (USDI Fish and Wildlife Service 2017b).

The 2018 updated list (USDI Fish and Wildlife Service 2018) continues to indicate that grizzly bear may be present in the area. The BNF does not contain any designated critical habitat for grizzly bears.

The entire portion of the BNF in the Bitterroot Mountains was designated as part of the Bitterroot Grizzly Bear Recovery Zone in the *Grizzly Bear Recovery Plan* (USDI Fish and Wildlife Service 1993). All of western Montana west of Highway 93 and south of I-90 was identified as part of the Bitterroot Grizzly Bear Experimental Population Area in the *Grizzly Bear Recovery in the Bitterroot Ecosystem FEIS* (USDI Fish and Wildlife Service 2000a). Neither of these areas includes the Sapphire Mountains where the DLL II project area is located. Grizzly bears have not been confirmed in the BNF portion of the Bitterroot Grizzly Bear Recovery Zone since the mid-1950s.

The eastern edge of the BNF is about 80 miles west of a direct line between the Northern Continental Divide Ecosystem (NCDE) and the Greater Yellowstone Ecosystem (GYE) recovery zones. The DLL II project area is approximately 58 miles south of the nearest point of the NCDE Recovery Zone, 120 miles northwest of the nearest point of the GYE Recovery Zone and 15 miles east of the currently unoccupied Bitterroot Recovery Zone. For several years grizzly bears have been expanding south out of the Primary Conservation Area of the NCDE and west from the GYE. Transient grizzly bears could travel through portions of the Sapphire Mountains in the proximity of the project area. The closest grizzly bear sightings to the project area are assumed to be associated with the NCDE population.

There are only two relatively recent confirmed grizzly bear occurrences in the Sapphire Mountains. In September 2002 a grizzly was videotaped feeding on a moose gut pile in the Rock Creek drainage, and the next day appeared on private property on Sunset Bench about 4 miles southeast of Stevensville and about 35 miles north of the DLL II project area. This bear is thought to have returned to the east side of the Rock Creek drainage (J. Jonkel, pers. comm.). In October 2012 grizzly tracks were photographed and verified on a road in the head of Sleeping Child Creek, just north of the eastern tip of the DLL II project area (*Ibid*).

Other recent, relatively nearby confirmed grizzly bear occurrences not in the Sapphires include “Ethyl’s” brief visit to the foothills of the Bitterroot Mountains west of Florence in May 2014, which was about 42 miles north of the project area. In 2013 a grizzly was photographed at Georgetown Lake, about 38 miles east-northeast of the project area (J. Jonkel, pers. comm.). In June 2016, two grizzly bear sightings and a report of grizzly tracks were verified in the West Pioneers, approximately 46 miles southeast of the DLLII project area (*Ibid*).

Recent research that used GPS locations of 124 male grizzly bears to model potential paths for bears to move between the NCDE and the GYE predicted that there was a relatively low probability that the Sapphire Mountains would be a pathway used to connect these two populations (Peck et al. 2017). The model predicted that more likely pathways to connect the NCDE and GYE grizzly bear populations lay further to the east through the Tobacco Root/Boulder Ranges, the Flint Creek/Garnet Ranges or the Bridger/Big Belt Ranges. However, less likely paths along ranges like the Sapphires may involve more exploration among dispersing bears (*Ibid*), and offer plausible routes for grizzly bear dispersal.

The effects of displacement and under-use of habitat are tempered by local resource availability, resource condition, seasonal use, and the number of grizzly bears using an area. Currently, the number

of grizzly bears using the BNF in the Sapphire Mountains area is none to very low, and numbers are expected to increase relatively slowly over time. This is especially true for female grizzly bears. Males move more frequently and over longer distances than females (Proctor et al. 2012). Males have large home ranges and establish home ranges nearly three times further away from their mother's home ranges than do female offspring. Females usually establish smaller home ranges than males that overlap with their mother's home range (Waser and Jones 1983; Schwartz et al. 2003). As a result, females generally disperse over much shorter distances than male grizzly bears (McLellan and Hovey 2001; Proctor et al. 2004). Therefore, female dispersal is a multi-generational process where females must live year-round in an area, successfully reproduce, and offspring disperse into adjacent, unoccupied habitat. Thus, female grizzly bear presence on the forest is likely to increase only slowly if and when population pressure from the NCDE, or the GYE grows.

Environmental Baseline

Spatial and Temporal Bounds

Within recovery zones, Bear Management Units (BMUs) were identified as analysis areas that approximate a lifetime size of a female bear's home range. They were further divided into subunits that approximate the annual home range size of an adult female grizzly bear. Subunit size can vary but are approximately 100 square miles and provide the optimal scale for evaluation of seasonal feeding opportunities and landscape patterns of food availability for grizzly bears (USDI Fish and Wildlife Service 2011). For this reason the subunit level scale is an appropriate one to analyze direct, indirect and cumulative effects to grizzly bears from project activities. As the proposed project is not within a recovery zone, there are no BMUs or subunits identified.

Since no BMUs or subunits are identified in the Sapphire Mountains, and no grizzly bears are known to occupy the area, a hypothetical female home range of the size suggested by studies in the NCDE was selected for analysis. This hypothetical home range is larger than the project area, and does include the suite of seasonal habitats required to support grizzly bear reproduction. In particular, this hypothetical female home range includes denning habitat, spring and fall foraging habitat and secure areas. This hypothetical home range includes a wide range of elevations and aspects that support both mesic and xeric forest types, open grasslands, areas dominated by shrubs, and numerous small, wet meadows. The combination of these habitats provides a variety of grizzly food and cover resources throughout the season. In addition, this area contains abundant mid to higher elevation, steeper terrain that provide suitable denning habitat. Therefore, the analysis for effects to grizzly bears for the DLL II project was conducted at this larger area scale, which is also defined as the action area (Figure 2). There is additional secure area available in either direction along the Sapphire Divide, and in the adjacent unroaded east slopes leading down to Rock Creek. Even though these additional areas are outside the selected action area, they provide additional contiguous secure areas for grizzly bears in the action area to disperse into.

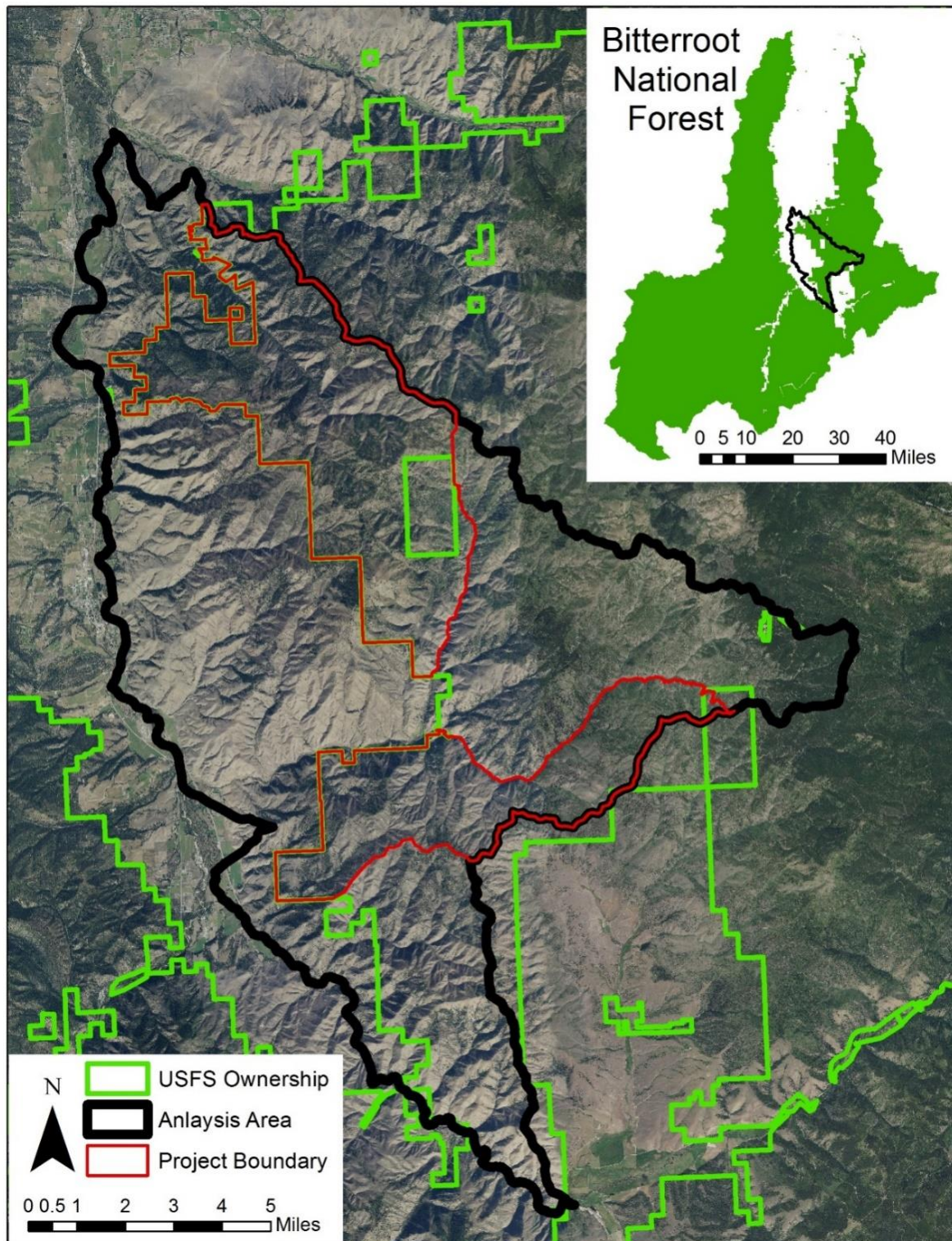
The action area that was analyzed for effects to grizzly bears contains approximately 90,156 acres. This is about 109% larger than the average female grizzly bear home range in the NCDE outside of Glacier National Park, which is approximately 43,243 acres (Mace and Roberts 2011). This larger action area

reflects the hypothesis that grizzly home ranges are likely to increase in size south of the NCDE because potential grizzly habitat tends to become drier and less productive. The action area is large enough to evaluate the ability of the habitat to support grizzly bears, but small enough to not obscure the effects of the proposed action. All of the proposed project actions are contained within this area.

The action area includes all land ownerships including private lands. Only National Forest System lands are included in the analysis of direct and indirect effects, whereas all land ownerships within the action area are included in the analysis of cumulative effects. To assess project Forest Plan compliance, open road densities were assessed at the third order drainage scale using the elk habitat effectiveness model (Lyon 1983) as directed in the Forest Plan.

The temporal bounds for the effects analysis is five to fifteen years in which the project will be implemented and all activities, including rehabilitation, will be completed. Longer-term effects to species habitat lasting beyond fifteen years and up to fifty years are discussed in the context of vegetation succession and the effect on habitat changes but not in terms of potential disturbance.

Figure 2. Project Boundary and Grizzly Bear/Canada Lynx Action Area



Bitterroot Forest Plan Grizzly Bear Direction

The BNF Plan does not contain specific direction pertaining to grizzly bears or grizzly bear habitat because grizzly bears were not known to occur on or near the BNF when the Plan was signed (USDA Forest Service 1987). However, in June 2014 the entire Anaconda-Pintler (A-P) Wilderness, including the BNF portion of the Wilderness, was included in a new Beaverhead-Deerlodge National Forest (BDNF) Forest-wide food storage order that was adopted and replaced previous orders. The grizzly bear action area for the DLL II project is not within the A-P Wilderness, and is thus not covered by this BDNF food storage order.

Currently, the Conservation Strategy for the NCDE is under development and open motorized road and trail density (OMRTD) management is managed under each National Forest's Plan for Forests within the NCDE. Forests that are within the NCDE recovery zone manage OMRTD according to Bear Management Units (BMUs) and BMU Subunits. The BNF is not within the recovery zone of the NCDE and does not follow this Amendment. The BNF does however manage for specific open road densities on a third order drainage scale to provide elk habitat effectiveness (EHE) (USDA Forest Service 1987). The EHE standard results in areas of secure habitat for a range of species including grizzly bears.

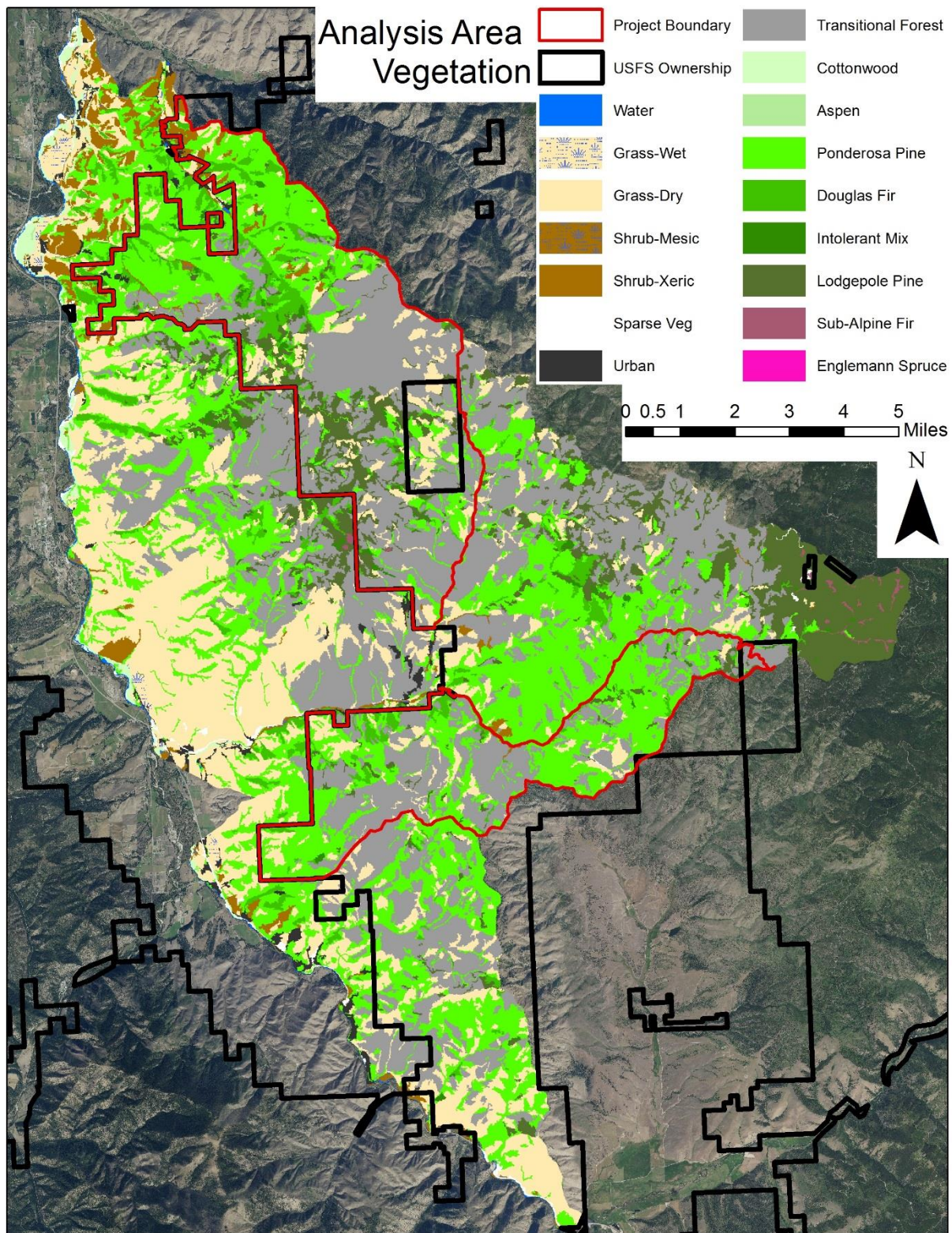
The *Grizzly Bear Management Plan for Western Montana* (Dood et al. 2006) contains specific recommendations for public lands. The reports states: "Of particular importance on public lands is food storage to minimize conflicts with wildlife, maintain visual cover along riparian areas for travel and to not increase road densities on the landscape". These recommendations are incorporated into the project as food storage is required for contractors as a design feature in the EA and open road densities on the landscape are not increased.

Existing Condition in the Action Area

Vegetative Condition

Herbaceous vegetation classes, transitional forest (early successional shrub, woody, and grassland habitat classes precipitated by stand replacing fires in 2000) (30.9%), and grasslands (21.5%) provide the majority of wildlife habitat. Coniferous forest (dominated by ponderosa pine, and Douglas fir on north facing slopes, at lower elevations, and lodge pole pine at upper elevations) influence about 42.1% of the analysis area, and scattered shrublands (primarily at lower elevations) influence about 3.1%. Urban (rural structures), deciduous trees, sparse vegetation, and water are minor components of the landscape (< 3%). See Figure 3 and Appendix 2. Some patches of regenerating forests are dense and of sufficient height to provide elk hiding cover (USDA Forest Service 1978). Analysis suggests aspen does not contribute a significant portion of the overall vegetation composition; however, aspen is difficult to accurately map with remote sensing, and is underrepresented in VMap (Brown 2016). Aspen in the analysis area is predominately incorporated into the transitional forest classification. See Appendix 2 for a detailed classification of vegetation in the project area.

Figure 3. Vegetation in the analysis area for Darby Lumber Lands Phase II Project.



Species Assessment

Denning Habitat

Grizzly bear dens in western Montana typically occur at elevations between 5,900-6,600 feet and at slopes greater than fifty percent in open and open-timbered areas on western, northern or eastern aspects (Dood et al. 2006). Potential denning habitat that meets these criteria does not occur in areas where treatments are proposed because they are at relatively low elevations (average approximately 5,000 feet) and are on low to moderate slopes. Potential denning habitat does occur within the eastern, higher elevation portion of the action area where no project activities are proposed.

Motorized Road and Trail Density

The IGBC observed that management of motorized use has been primarily accomplished through restriction of certain types of motorized use on established access routes, i.e. management of open motorized route densities (Interagency Grizzly Bear Committee 1998). The BNF manages for specific open road densities on a third order drainage scale to provide elk habitat effectiveness (EHE) (USDA Forest Service 1987). The EHE standard results in areas of secure habitat for a range of species including grizzly bears. The EHE standard requires a maximum open road density of 2 miles/mile² in "roaded" drainages, and 1 mile/mile² in "unroaded" drainages. There are 13 third order drainages wholly or partially within the DLL II grizzly bear action area. EHE standards are met in 2 of these 13 drainages. Many of the motorized roads in the area counted as "open" for EHE analysis are closed to public motorized use during the fall and spring hunting seasons.

Road density was assessed by procedures outlined by Wakkinen and Kasworm (1997) and by Boulanger and Stenhouse (2014). The former procedure uses focal statistics within a 1 mi² moving window to create a 30 m resolution raster of road density; the later reports linear miles of road/mi². Road density was assessed at 2 use levels:

- "Total" road density (TMRD) includes gated roads and motorized trails but omits roads that are brushed in or otherwise impassible. The guideline for total roads is to have less than 19% of the subunit with a road density over 2 miles per section.
- "Open" road density (OMRD) includes roads with: (a) unregulated traffic for over 14 days, or (b) more than 1 trip per day in each season. The guideline for open roads is to have less than 19% of the subunit with a road density over 1 mile per section.

The threshold for adverse effects of road density on grizzly bear habitat identified by Mace et al. (1996) and Boulanger and Stenhouse (2014) is 1.0 mi/mi² and 1.21 mi/mi², respectively. Wakkinen and Kasworm (1997) reported female grizzly bears using road densities >2mi/mi² less than expected. Lamb et al. (2018) determined that the log likelihood of grizzly bear use approached zero at a road density slightly more than 3 km/km² (4.82 mi/mi²) in British Columbia. Mace et al. (1996) determined that road densities >6.0km/km² (9.7mi/mi²) are unused by grizzly bears. We report % area of road densities at the following thresholds: 0, >0-1, 1-2, 2-5, 5-10, >10 mi/mi² (see Table 1).

Table 1. Road density in the Action Area.

			Full Analysis Area Exent (141 mi ²)						Analysis Area USFS land only (84 mi ²)					
Method	Road Use Level	Units/Class	Existing Condition	Implementation Phase	Post-Implementation				Existing Condition	Implementation Phase	Post-Implementation			
Linear mi/mi ²	Total Road Density	mi/mi ²	5.13	4.03	3.96				5.99	4.34	4.22			
	Open Road Denisty	mi/mi ²	3.02	.	2.89				2.65	.	2.49			
			mi ²	% Area	mi ²	% Area	mi ²	% Area	mi ²	% Area	mi ²	% Area	mi ²	% Area
Focal Statistics	Total Road Density	0 mi/mi ²	6.4	4.5	5.7	4.0	6.7	4.7	4.4	5.3	3.8	4.6	4.5	5.4
		>0 - 1 mi/mi ²	8.3	5.9	11.3	8.0	12.1	8.6	4.8	5.8	6.6	7.9	7.1	8.6
		1 -2 mi/mi ²	8.9	6.3	14.8	10.5	14.8	10.5	4.9	5.8	8.1	9.6	8.3	10.0
		2 - 5 mi/mi ²	42.9	30.4	62.1	44.1	61.5	43.7	17.5	20.9	30.5	36.5	29.9	35.7
		5 - 10 mi/mi ²	50.1	35.5	46.3	32.8	45.0	32.0	31.3	37.4	34.1	40.8	33.2	39.6
		>10 mi/mi ²	24.4	17.3	0.7	0.5	0.7	0.5	20.7	24.7	0.6	0.7	0.6	0.7
					mi ²	% Area	mi ²	% Area	mi ²	% Area	mi ²	% Area	mi ²	% Area
Open Road Denisty	0 mi/mi ²	7.8	5.5	.	.	9.6	6.8	5.7	6.8	.	.	6.9	8.3	
	>0 - 1 mi/mi ²	12.4	8.8	.	.	16.6	11.8	8.4	10.0	.	.	11.4	13.7	
	1 -2 mi/mi ²	15.3	10.8	.	.	21.6	15.3	11.2	13.4	.	.	14.9	17.8	
	2 - 5 mi/mi ²	66.7	47.4	.	.	74.9	53.2	39.2	46.9	.	.	42.4	50.7	
	5 - 10 mi/mi ²	38.0	27.0	.	.	18.1	12.9	18.9	22.6	.	.	8.0	9.5	
	>10 mi/mi ²	0.7	0.5	.	.	0.0	0.0	0.2	0.2	.	.	0.0	0.0	
	No Adverse affects to Grizzly Bears (Mace et al. 1996, Boulanger and Stenhouse 2014)													
Adverse Affects to Grizzly Bears (Mace et al. 1996, Boulanger and Stenhouse 2014)														
Less than expected use by Grizzly Bears (Wakkinen and Kasworm 1997)														
Likelihood of Grizzly bear use zero (Lamb et al. 2018)														
Unuseable by Grizzly Bears (Mace et al. 1996)														

IGBC guidelines for the NCDE suggest that a 19-19-68 rule set should be the goal for management of road density in bear management subunits within this occupied recovery area. The proposed project is not within a recovery area and no road density standards regarding grizzly bears have been adopted or are enforceable, however for comparison purposes suggested NCDE goals are informative. In summary, this rule set requires that a grizzly bear subunit have no more than 19% of its area with >1 mi/mi² of open road; no more than 19% of its area with >2 mi/mi² of total road; and at least 68% of the area must meet criteria for security core (i.e., habitat blocks greater than 2,500 acres and greater than 500 meters from drivable roads). The analysis area has/would have 86-83-11 and 81-76-12 percentages in the existing and post-implementation condition, respectively.

Secure Area

The high road density in the action area results in only 11% of the action area currently meeting the criteria for security core.

Cover

About 38,000 acres (42%) of the action area is classified as the Tree lifeform by VMap. We assume that most of the areas classified as the Tree lifeform are currently providing hiding cover. About 50,600 acres

(56%) of the action area is classified as Herbaceous, Shrubs or Deciduous trees by VMap. We assume most of these areas provide forage plants for grizzly bears during at least part of the year.

Grizzly Bear Use

There have been no known occurrences of grizzly bears in the DLL II action area for at least the past 50 years. The only known recent grizzly bear occurrence near the action area was in 2012, when verified grizzly tracks were found on a road near the head of Sleeping Child Creek, within a mile or two north of the eastern tip of the action area (J. Jonkel pers. comm.). The only other recent confirmed grizzly bear occurrence in the Sapphires was the bear that crossed the Sapphires from Rock Creek to Sunset Bench southeast of Stevensville and back in 2002. A grid of 24 trail cameras located within the proposed timber treatment units between June 20 and August 23, 2017 did not detect any grizzly bears in 1,114.6 camera days.

More distant recent sightings of grizzly bears have occurred near Georgetown Lake, Anaconda and Wisdom. The area between the John Long Mountains, Flint Creek range and the Pintler range has been modeled as a potential grizzly linkage zone between the Boulder/Garnet mountain range complex and the Anaconda-Pintler Wilderness (Peck et al. 2017).

Grizzly Bear/Human Interactions

There have been no known grizzly bear/human conflicts in the action area nor have there been any grizzly/human conflicts anywhere on the BNF in over 50 years. The action area receives a moderate to heavy amount of human use for activities such as firewood gathering, ATV riding, hiking, fishing, horseback riding, berry picking and mountain biking during the summer, and heavy use during hunting season.

There are numerous private residences and several large ranches within the action area, located mostly along the western edge of the area near the Bitterroot River, along the lower portion of Rye Creek and North Rye Creek, and along Little Sleeping Child Creek.

The Crystal Mountain Mine is an inactive open pit mine that used to produce fluorospar and scandium near the head of a tributary of Rye Creek near the eastern edge of the action area. This mine ceased production many years ago, but could potentially be re-activated in the future.

The Deer Mountain Lookout is a functioning BNF fire lookout located near the center of the project area on Deer Mountain. It is staffed during the fire season, but closed the rest of the year. There are no Forest Service campgrounds within the action area.

Grazing Allotments

There are five BNF cattle grazing allotments wholly or partially within the analysis area: Harlan Gulch (active, 2,882 acres), Little Sleeping Child (vacant, 7,664 acres), Rye Creek (closed, 17,032 acres),

Medicine Tree (active, 12,111 acres), and Sula Peak (active, 4,948 acres). In addition, cattle graze on private lands in the western portion of the action area.

Direct and Indirect Effects Analysis

All activities in the proposed action would occur in suitable or potentially suitable grizzly bear habitat. Commercial timber harvest, non-commercial treatments, prescribed burning, road construction, and road decommissioning/storage treatments all have the potential to directly and indirectly impact the species due to noise and disturbance from the implementation of the proposed activities, human presence and a change in the structure and age classes of vegetation in each treatment unit. However, in the 2013 BO for the adjacent BDNF Forest Plan (USDI Fish and Wildlife Service 2013), the USFWS stated, “We do not anticipate adverse effects as a result of vegetation management...except for the effects of the associated access management and food and attractant storage.” Therefore, indirect effects due to habitat changes resulting from vegetative management treatments are expected to be insignificant.

Effects to Denning Habitat

No effects are anticipated to denning habitat because areas proposed for treatment are at relatively low elevations and are on low to moderate slopes. Based on several studies on grizzly bear den site selection in Montana (Dood et al. 2006, Mace and Waller 1997, Servheen and Klaver 1983, Aune and Kasworm 1989), it is unlikely that grizzlies would select these low elevation areas for denning. Higher elevation areas that contain areas with higher potential for grizzly bear denning would not be affected by proposed project activities.

Effects to Motorized Road and Trail Density

The proposed actions decrease overall road length in the action area by 40 linear miles. This decrease is consistent with direction for BORZ managed by the Montana DNRC and the Helena-Lewis and Clark, Kootenai, and Lolo National Forests (Dood et al. 2006, Bradford 2013). The significance of this reduction is masked by reporting linear mi/mi² because values are smoothed across the entire reporting area. Reporting focal statistics provides a clearer picture of where reductions have the most impact. For example, reductions in percent area of the 2 highest classes of road density, are reciprocated with gains in the percent area of the 4 lowest classes of road density (Table 1). Visual representation of road reductions are presented in Figures 4 and 5, below.

Table 2. Existing and Post-Implementation Condition of motorized routes in the project area.

Motorized Route Summary Table						
Project Area Motorized Vehicle Use Map (MVUM) codes	MVUM Code description	Open Dates Highway Vehicles	Open Dates ATV/MTC	Open Dates MTC	Current (miles)	Proposed (miles)
0	Closed to motorized use	Closed year-long	Closed year-long	Closed year-long	68.0	34.0
3	Roads open to highway legal vehicles, yearlong	1/1 to 12/31	1/1 to 12/31	1/1 to 12/31	54.6	45.3
4	Roads open to highway legal vehicles, seasonal	12/2 to 10/14	12/2 to 10/14	12/2 to 10/14	12.7	11.5
4	Roads open to highway legal vehicles, seasonal	6/16 to 10/14	6/16 to 10/14	6/16 to 10/14	58.5	48.0
4	Roads open to highway legal vehicles, seasonal	4/1 to 11/31	4/1 to 11/31	4/1 to 11/31	0.0	6.6
7	Trails open to vehicles 50" or less, yearlong	Closed year-long	1/1 to 12/31	1/1 to 12/31	3.9	0.0
8	Trails open to vehicles 50" or less, seasonal	Closed year-long	12/2 to 10/14	12/2 to 10/14	20.7	6.8
8	Trails open to vehicles 50" or less, seasonal	Closed year-long	6/16 to 10/14	6/16 to 10/14	3.0	11.5
10	Trails open to motorcycles, seasonal	Closed year-long	Closed year-long	06/16-10/14	7.4	7.1
Decommissioning					NA	35.3
Storage (MVUM code 0 status after project)					NA	16.3
Subtotal – Route miles with motorized access					160.7	136.8
Subtotal – Route miles without motorized access - includes stored and closed (MVUM code 0) routes.					68.0	50.0
Subtotal - Total system roads, with and without motorized access					228.8	186.8
Route miles removed from NF System (includes decommissioning and database corrections)					NA	42.0
Totals					228.8	228.8

Figure 4. Total road density focal statistics at 30m resolution in the analysis area expressed as miles of road within a one square mile moving window.

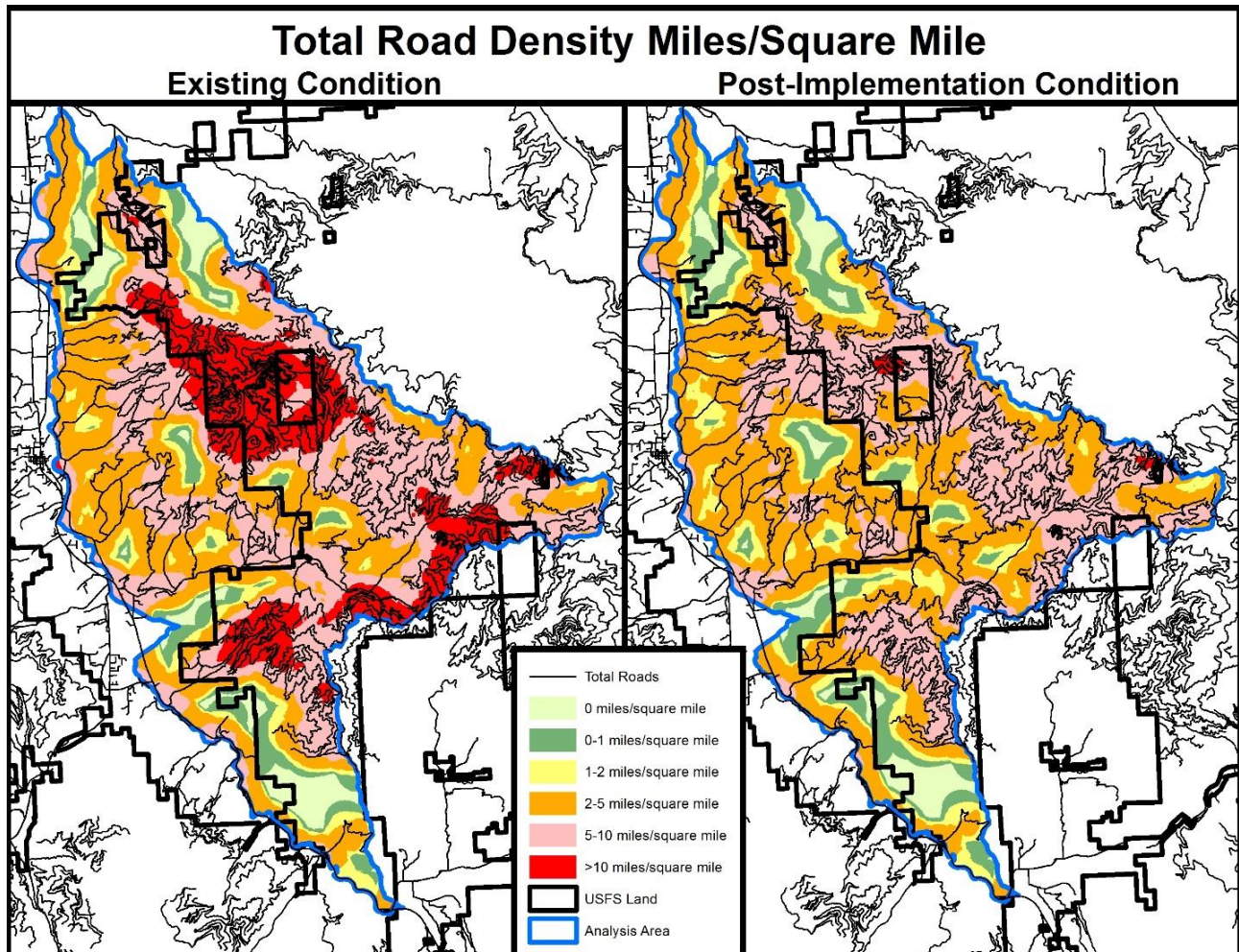
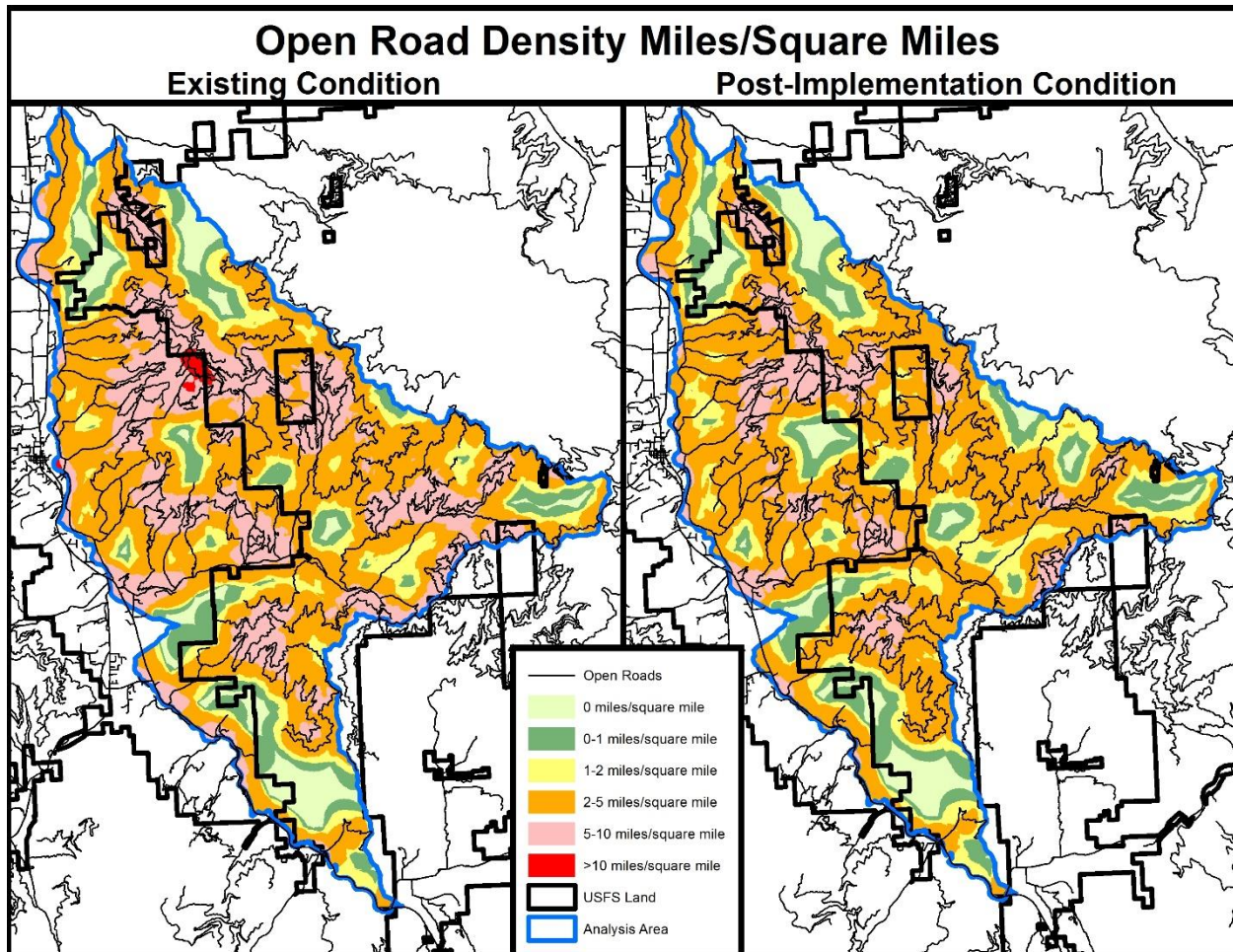


Figure 5. Total road density focal statistics at 30m resolution in the analysis area expressed as miles of road within a one square mile moving window.



Only about 17% and 25% (23.6 and 35.5 mi/mi²) of the analysis area has a total and open road density lower than 2 mi/mi², respectively. These areas are fragmented into several small patches incapable of providing security (as defined by the IGBC) for grizzly bear. However, the proposed action would reduce road density. The post-implementation linear road density in the analysis area and on USFS land within the analysis area would be 3.96 and 4.22 mi/mi², respectively. This road density is still higher than recommended thresholds (Mace et al. 1996, Wakkinen and Kasworm 1997, Boulanger and Stenhouse 2014, and Lamb et al. 2018), but improves the existing condition). The likelihood of grizzly bear using the analysis area is extremely low based on both existing and predicted road densities (Mace et al. 1996, Ladle et al. 2018) and because brown bears have the ability to sense threatening landscapes (Stoen et al. 2015).

Effects to Secure Area

The proposed actions would improve the area meeting the criteria for security core slightly to 12% of the action area.

Effects to Cover

Timber harvest and prescribed burning treatments would temporarily eliminate hiding cover for the grizzly bear on about 1,274 acres, or about 1.5% of the action area.

Effects to Grizzly Bear Use

It is unlikely that the project would change the potential for grizzly bear use in the action area. Although motorized road and trail density would be reduced by 40 linear miles, the remaining road and trail density and associated human use would be high enough to dissuade transient grizzlies from remaining in the area.

Effects to Grizzly Bear/Human Interactions

It is unlikely that the project would increase the potential for grizzly bear/human interactions in the action area because the remaining road and trail density and associated human use would be high enough to dissuade transient grizzlies from remaining in the area. In addition, all project activities associated with the proposed action would be subject to the project's food storage requirements, thus reducing the potential for human/grizzly bear conflicts. With such measures taken to minimize the potential for grizzly bear-human conflicts, the effects of these conflicts are expected to be discountable.

Effects to Grazing Allotments

The project would have no effect to the number of cattle or the season of use within the action area. It could have a minor effect to cattle distribution in the area by creating additional forage in harvest units. The project would not increase the risk of grizzly bears preying on cattle, which is very low because grizzlies are not known to occur in the action area, and any grizzlies that did occur would likely be transient bears.

Cumulative Effects

State lands within the action area, were mostly burned during the fires of 2000, and were salvage logged shortly thereafter. No additional activities are expected to occur on state lands in the foreseeable future.

Private lands constitute a substantial portion of the action area. Ranching activities, further home construction and typical home and yard maintenance activities on these private lands will likely continue. The effects to grizzly bear and grizzly bear habitat from these types of actions on private lands include potential disturbance or displacement due to human presence, motorized use and other mechanized equipment, presence of livestock or garbage (unnatural food sources), and minor changes

in forested condition classes. High levels of human activity usually have a negative effect on the grizzly bear population because the greatest cause of grizzly bear mortality in the NCDE is from conflicts with humans. All of these activities had or have the potential to impact grizzly bears and/or grizzly bear habitat in the action area. The presence of these activities may lead grizzly bears to avoid otherwise suitable habitat. This is unlikely however, as no grizzly bears have been sighted in the action area to date and the action area is approximately 58 miles away from the NCDE recovery zone and 120 miles away from the GYE recovery zone.

Determination of Effects and Rationale

I have determined the implementation of the proposed Federal action MAY AFFECT - IS NOT LIKELY TO ADVERSELY AFFECT grizzly bears. My determination is based on the following rationale:

- There have been no grizzly bear sightings in the action area in over 50 years and the project is 58 miles from the nearest point of the NCDE recovery zone and 120 miles from the nearest point of the GYE recovery zone. If disturbance of presumably transient, male bears did occur it would be temporary and insignificant, because disturbed bears could disperse into the Sleeping Child Inventoried Roadless Area, several adjacent unroaded areas or the Sapphire Wilderness Study Area to the north and south. Therefore, potential effects of disturbance and displacement of individual transient bears would be unlikely (discountable);
- Anticipated direct, indirect and cumulative effects would be negligible for reasons stated on pages 15-20;
- A food storage order is included as a design feature in the DLL II EA, and will be included as a contract requirement for contactors implementing the DLL II project. This design features will reduce the risk of possible human/bear interactions and bear mortalities. Therefore, the effects of such conflicts would be discountable;
- The project is assumed to reduce grizzly bear hiding cover within all 1,274 acres of proposed treatment units, or 1.5% of the action area. This reduction in hiding cover is temporary, and increased growth of shrubs and conifer regeneration resulting from overstory canopy reduction is expected to restore hiding cover in these treatment areas within 20 to 30 years. Since over 40% of the action area would still be classified as hiding cover, the effects of this temporary reduction in hiding cover would be insignificant;
- The project would have negligible effects to typical grizzly bear food sources such as big game animals or big game carrion on winter ranges, whitebark pine cones or riparian areas, and no effect to avalanche chutes. The project could result in a temporary reduction in the availability of grasses, forbs and shrubs within treatment units. Grasses, forbs and shrubs would likely respond positively to the reduction in overstory conifer canopy within several years, and could increase the production of grizzly bear forage plants within units. Overall, effects to grizzly bear forage would be insignificant;

- Motorized road and trail densities are currently quite high, but the project would reduce total motorized route length in the action area by 40 linear miles. While motorized route densities would remain well above recommended thresholds for grizzly bears, the project itself would have an insignificant, but slightly beneficial effect to grizzly bears;
- The project would not affect grizzly bear denning habitat.

Species Assessment – Canada Lynx

Current Status on the Bitterroot National Forest

The USFWS listed Canada lynx as Threatened throughout the contiguous United States in 2000 (USDI Fish and Wildlife Service 2000b). In 2007, the Forest Service and other agencies completed the Northern Rockies Lynx Management Direction (NRLMD) Final Environmental Impact Statement (FEIS) (USDA Forest Service 2007a). The NRLMD Record of Decision (USDA Forest Service 2007b) amended the forest plans of 18 National Forests within the Rocky Mountain, Intermountain and Northern Regions of the Forest Service, including the Bitterroot National Forest (BNF), to add specific objectives, standards, and guidelines described in the NRLMD for management of lynx habitat.

The NRLMD incorporated conservation measures from the Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et.al. 2000) into the amended forest plans. It utilized classifications of National Forest System lands as “occupied” or “unoccupied” by lynx, based on the Amended Lynx Conservation Agreement between the Forest Service and USFWS (USDA Forest Service and USDI Fish and Wildlife Service 2006).

The Bitterroot National Forest is classified as both secondary and unoccupied lynx habitat in the NRLMD (USDA Forest Service 2007a). The last verified records of lynx in Ravalli County include two animals documented by FWP trapping records in the winter of 1986-87. There are no known records documenting lynx reproduction in Ravalli County.

Canada lynx first appeared on the USFWS list of Threatened, Endangered and Candidate Species that may be present on the BNF on July 2, 2013 as “transient – secondary/peripheral habitat”. This addition of lynx to the USFWS list of Threatened, Endangered and Candidate species that may be present on the BNF did not change the BNF’s classification as unoccupied lynx habitat under the amended Canada Lynx Conservation Agreement (USDA Forest Service and USDI Fish and Wildlife Service 2006). The status of lynx is unchanged on the most recent version of the USFWS list (USDI Fish and Wildlife Service 2018). The BNF does not contain any designated Critical Habitat for lynx (USDI Fish and Wildlife Service 2014).

Environmental Baseline

Spatial and Temporal Bounds

In 2000, the LCAS recommended that LAUs be identified for all areas with lynx habitat “to provide analysis units of the appropriate scale with which to begin the analysis of potential direct and indirect effects of projects or activities on individual lynx, and to monitor habitat changes” (Ruediger et. al. 2000). The DLL II project area includes portions of two adjacent LAUs, the Cameron-North Fork Rye LAU and the Divide-Sleeping Child LAU. The lynx action area for this project includes most of the area within the Cameron-North Fork Rye LAU, and a small portion of the Divide-Sleeping Child LAU for a total of approximately 90,156 acres (Figure 2). This action area is large enough to evaluate the ability of the habitat to support lynx, but small enough to not obscure the effects of the proposed action. The proposed project would treat a very small portion of the mapped, secondary lynx habitat in the Divide-Sleeping Child LAU. All of the proposed actions are contained within this action area. Only National Forest System lands are included in the analysis of direct and indirect effects, whereas all land ownerships within the action area are included in the analysis of cumulative effects.

The temporal bounds for the effects analysis is ten to fifteen years in which the project will be implemented and all activities, including rehabilitation, will be completed. Longer-term effects to species habitat lasting beyond fifteen years and up to fifty years are discussed in the context of vegetation succession and the effect on habitat changes but not in terms of potential disturbance.

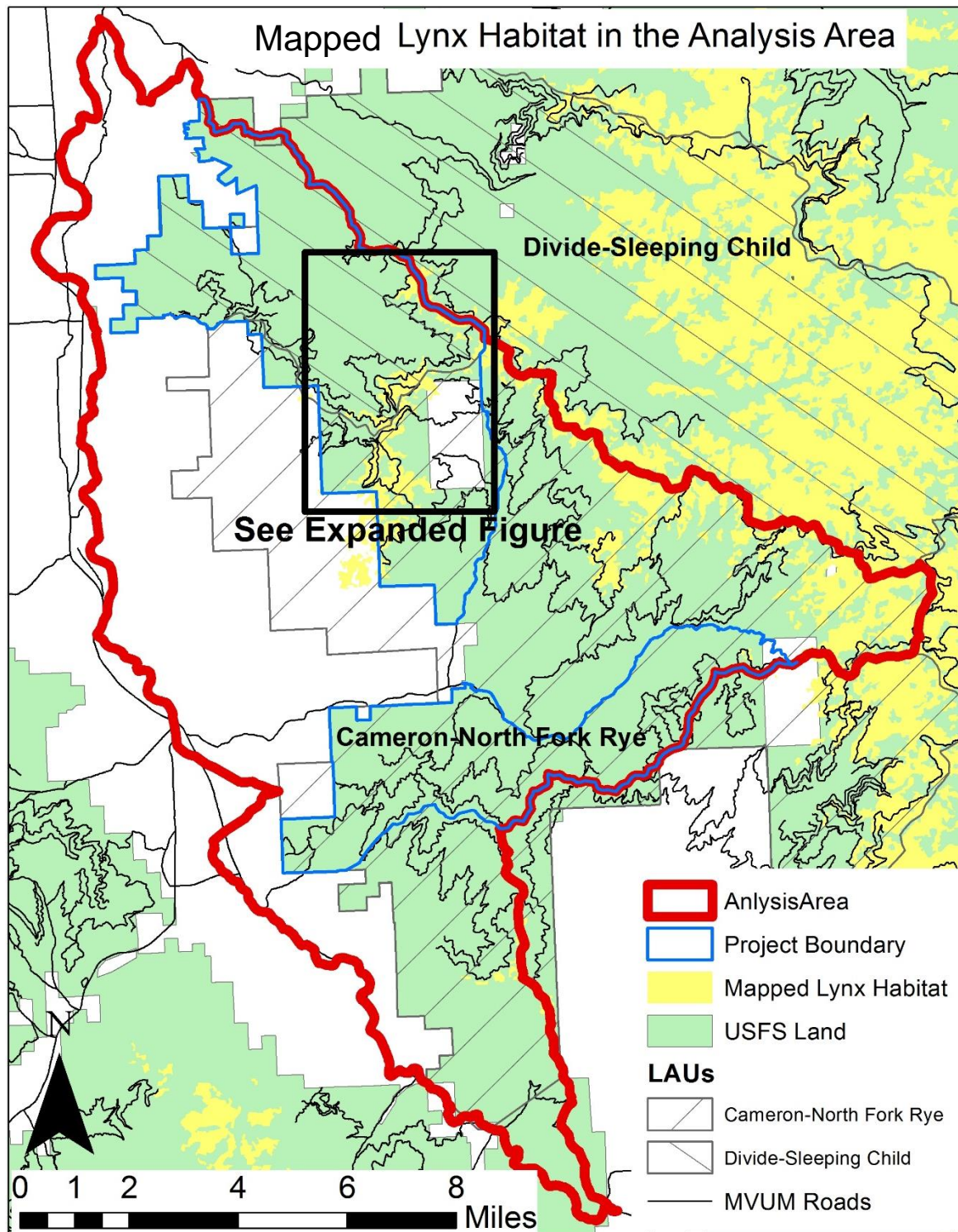
Forest Plan Specific Direction

The Bitterroot National Forest Plan (USDA Forest Service 1987) did not contain any direction specific to Canada lynx. However, the Northern Rockies Lynx Management Direction (NRLMD) was amended into the Forest Plan in 2007 by the NRLMD ROD (USDA Forest Service 2007b). Objectives, standards and guidelines contained in the NRLMD now provide Canada lynx direction in the Forest Plan.

Existing Condition in the Action Area

The Cameron-North Fork Rye LAU contains about 65,511 acres, of which about 8,516 acres (13%) is mapped lynx habitat (Figure 6). The Divide-Sleeping Child LAU contains about 54,331 acres, of which about 21,732 acres (40%) is mapped lynx habitat. Large portions of the mapped lynx habitat in both LAUs was burned by moderate to high severity wildfire in 2000, and is currently in the early stand initiation structural stage.

Figure 6. Mapped Lynx Habitat in the Action Area



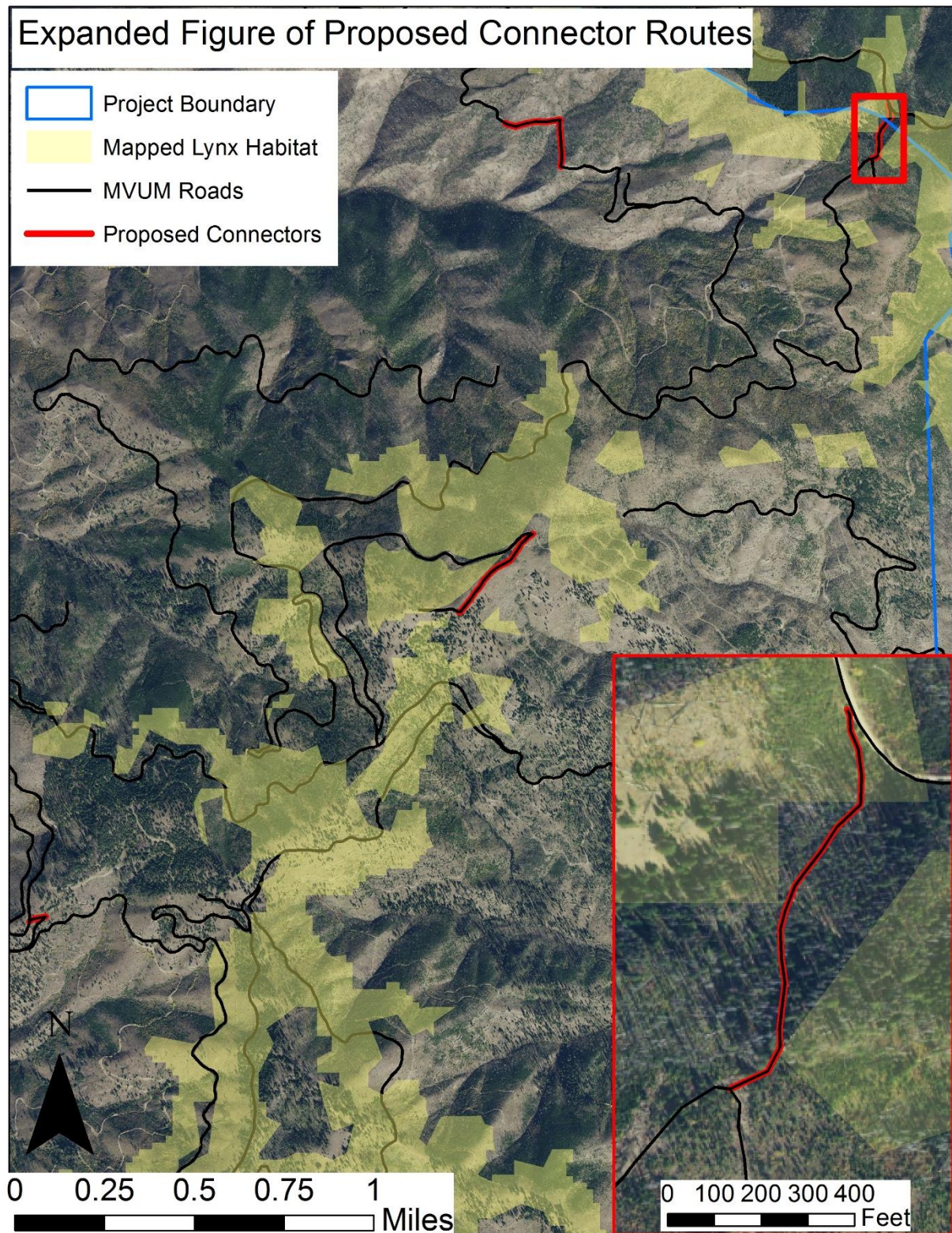
There are two trapping records of lynx within the action area, one from 1985 and the other from 1994. There are no other known lynx records from the action area or anywhere else on the BNF in the last 24 years, despite numerous winter track surveys and hare snare/camera trap stations.

Direct and Indirect Effects Analysis

Direct and indirect effects to lynx would be negligible. None of the timber harvest or prescribed burning actions would have any affect to lynx or lynx habitat because they are not within mapped lynx habitat. None of the system or temporary road construction, tracked-line machine trails or skid trails associated with timber harvest units would affect lynx or lynx habitat because they are not within mapped lynx habitat. None of the road decommissioning or road storage treatments would affect lynx or lynx habitat because they are not within mapped lynx habitat.

About 225' of new OHV trail would be cleared to a width of 6' through mapped lynx habitat, totaling 0.03 acres affected (Figure 7). This connector would be open seasonally from 6/16 to 10/15. The area is in the stem exclusion structural stage, so there would be no reduction in snowshoe hare habitat. This section of new OHV trail is on a broad, flat ridge, but connects to and is in close proximity to an existing main Forest road on the same ridge that is open year-round. Trail construction would meet NRLMD Guideline HU-G7 because the trail is not a permanent road, and the area is not important for lynx connectivity.

Figure 7. Proposed Connector Routes



Cumulative Effects

State lands within the action area, were mostly burned during the fires of 2000, and were salvage logged shortly thereafter. No additional activities are expected to occur on state lands in the foreseeable future. Private lands constitute a substantial portion of the action area, but are all dominated by grasslands or dry forest types that are not classified mapped lynx habitat. Activities on private lands are not expected to contribute to cumulative effects to lynx

Determination of Effects and Rationale

I have determined that implementation of the proposed Federal action MAY AFFECT - IS NOT LIKELY TO ADVERSELY AFFECT Canada lynx. My determination is based on the following rationale:

- The project occurs mostly outside of mapped lynx habitat, but would affect a very small portion of secondary, unoccupied lynx habitat. Lynx in the action area are likely to be transient individuals. Effects of habitat changes due to the project would be negligible to transient lynx;
- There have been no lynx sightings in the action area in 24 years, and the project area is 50 miles south of the southern edge of the nearest designated Critical Habitat (core habitat). It is unlikely that transient lynx would be in the action area during or after project implementation. Therefore, direct and indirect project effects to lynx are discountable;
- If disturbance of presumably transient lynx did occur it would be temporary and insignificant, because disturbed lynx could disperse into the Sleeping Child Inventoried Roadless Area to the north or the Sapphire Wilderness Study Area to the north and south. Therefore, potential effects of disturbance and displacement of individual lynx would be unlikely (discountable);
- The project does not affect connectivity of lynx habitat. Transient lynx would have difficulty traversing the action area due to the extensive areas in the early stand initiation structural stage resulting from fires in 2000. However, the Project would not reduce connectivity of lynx habitat. Therefore, effects to movements of transient lynx would be negligible;

The standards and guidelines of the NRLMD are met within the LAUs that contain the project (Appendix 3). Transient lynx would find adequate prey and habitat resources to sustain them as they moved through the area. Therefore, effects of the project to transient lynx would be insignificant.

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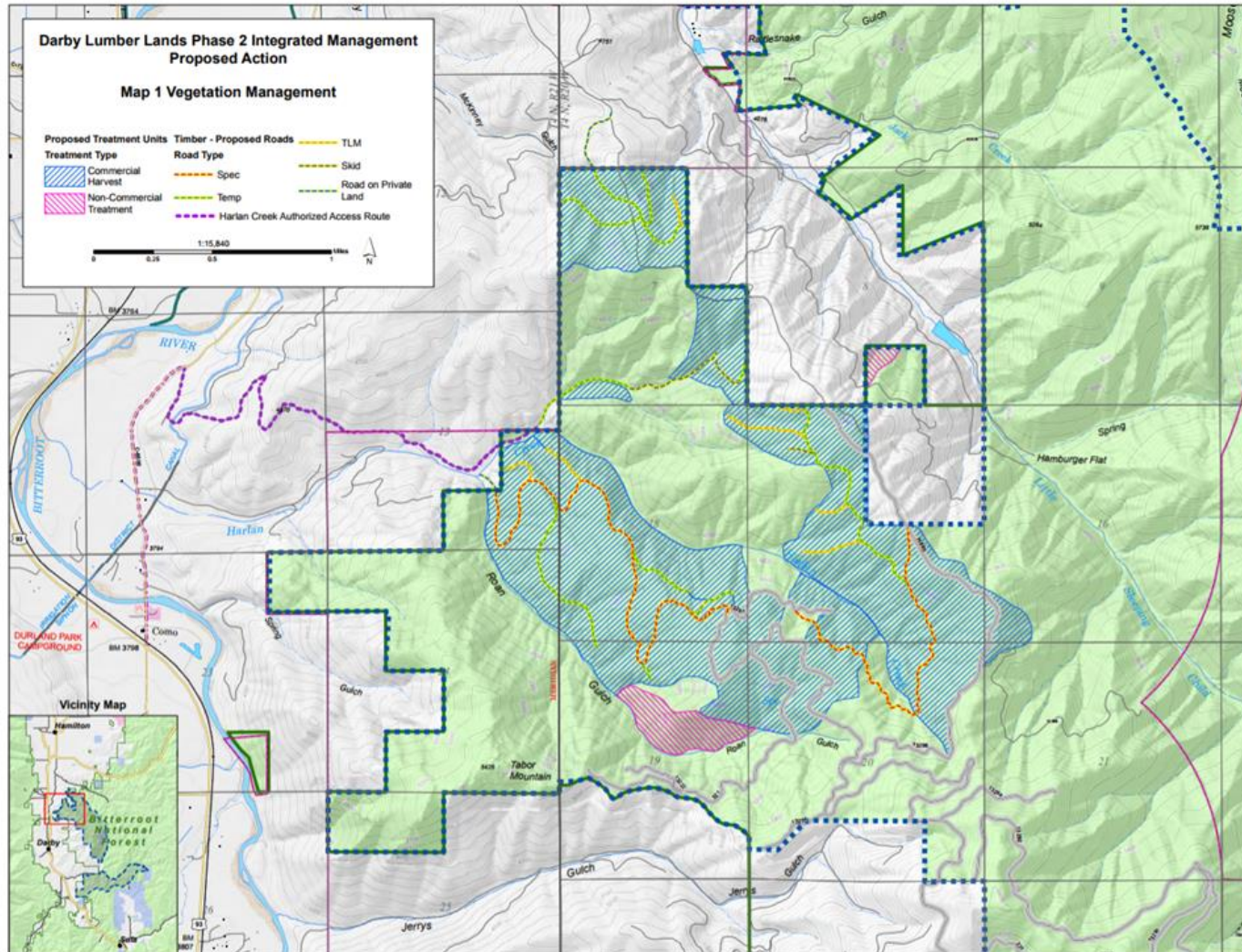
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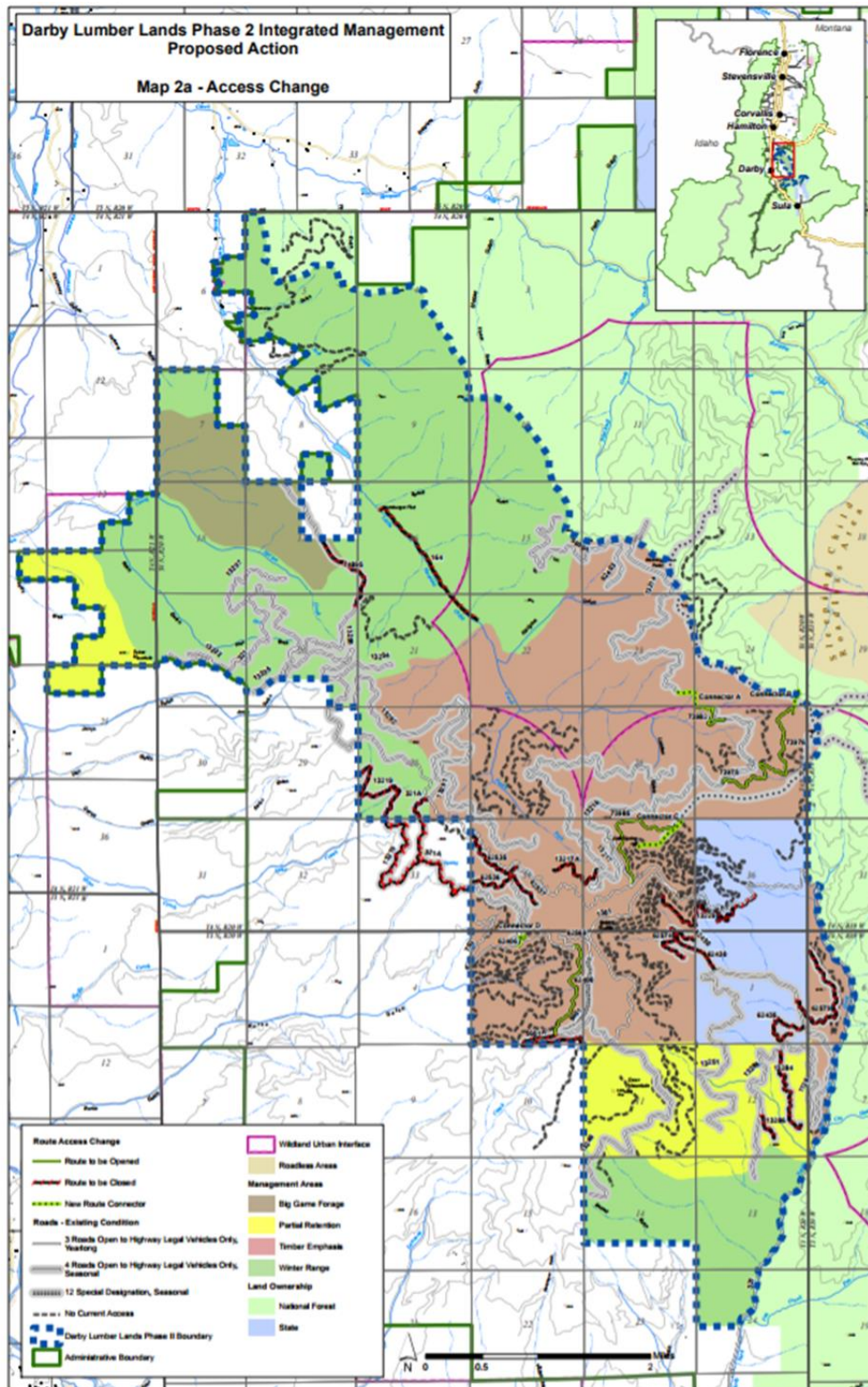
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Appendix 1. Maps of Proposed Vegetative and Transportation Projects

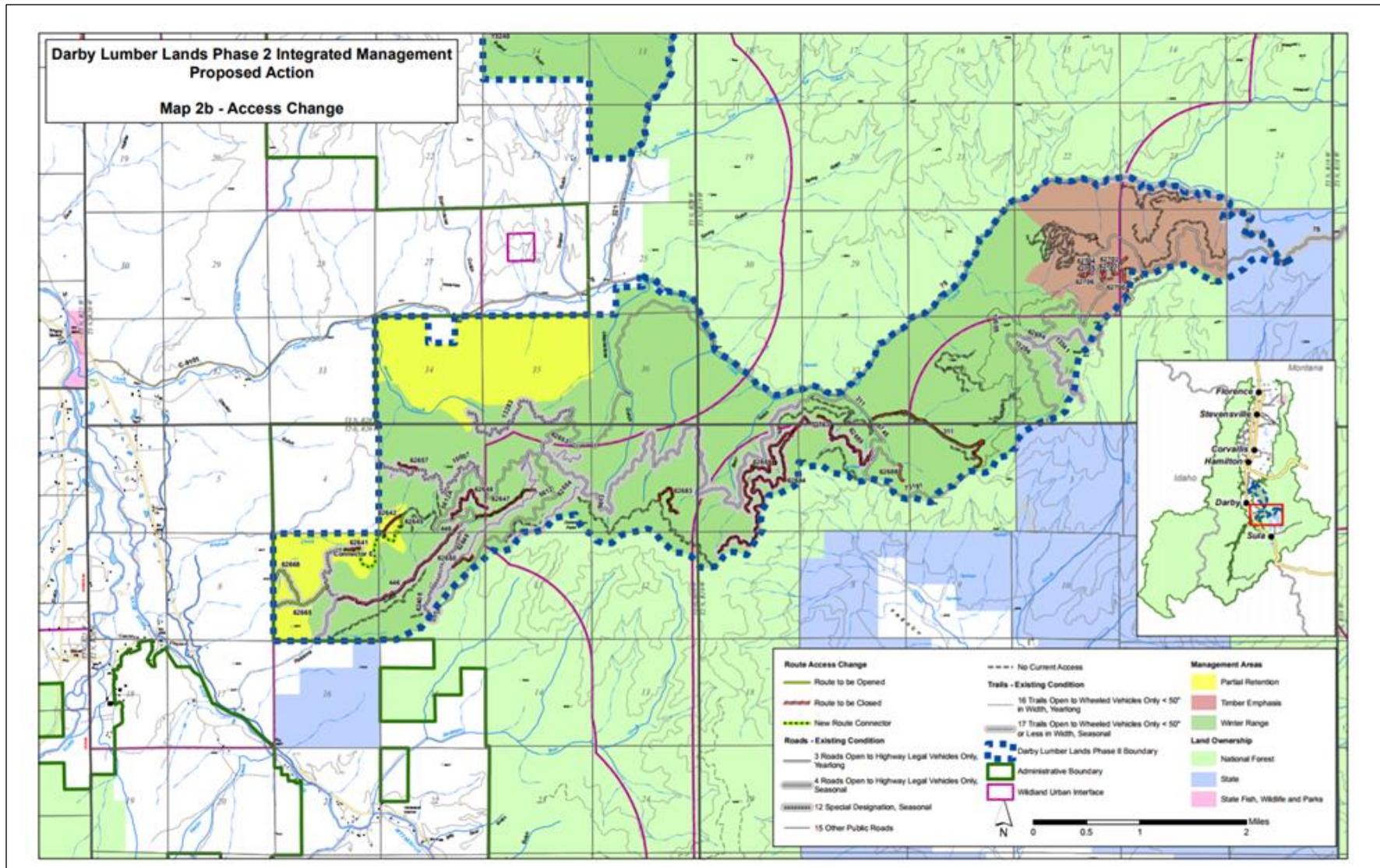
Map 1. Vegetation Management.



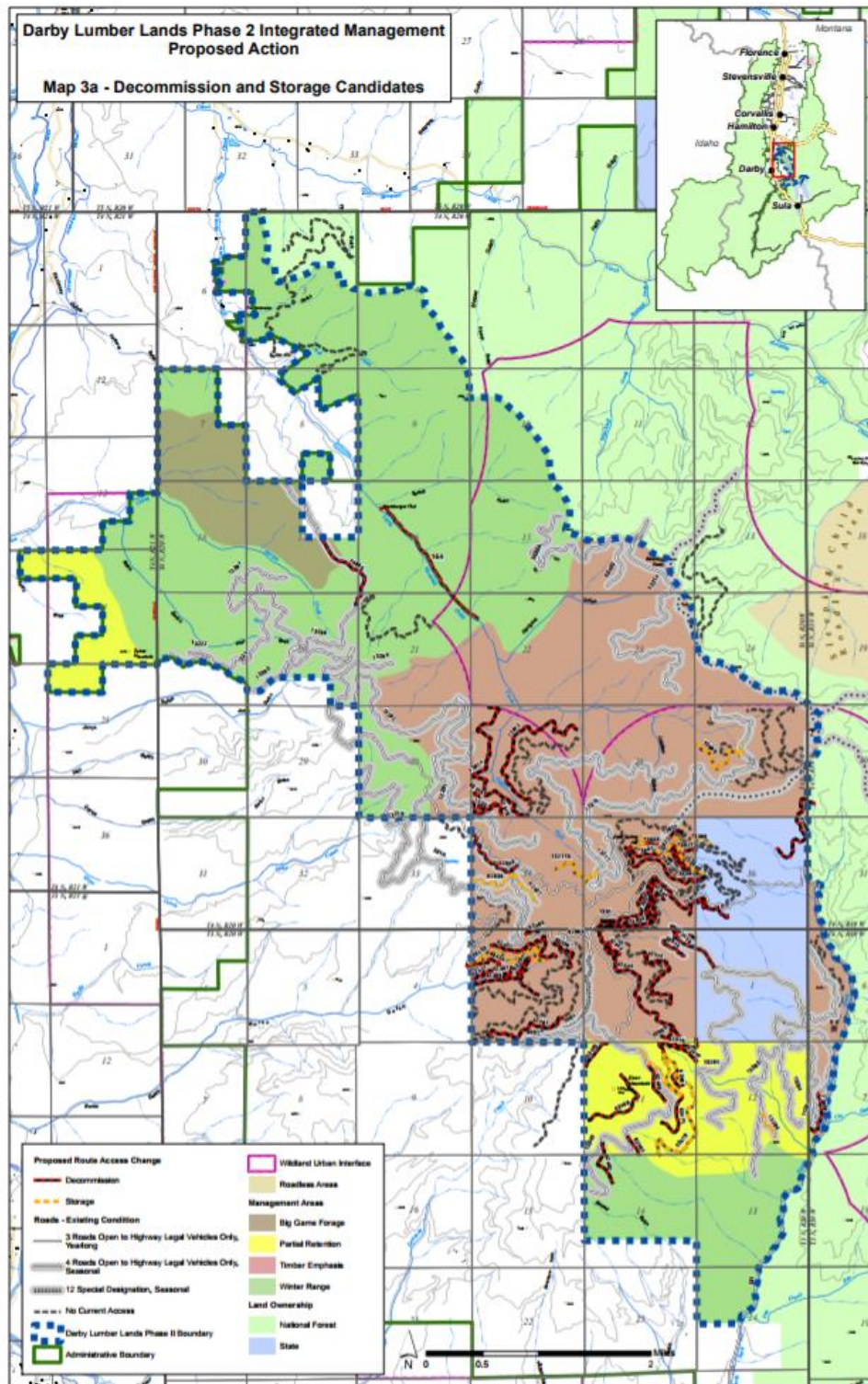
Map 2a . Proposed Access Change (North Half)



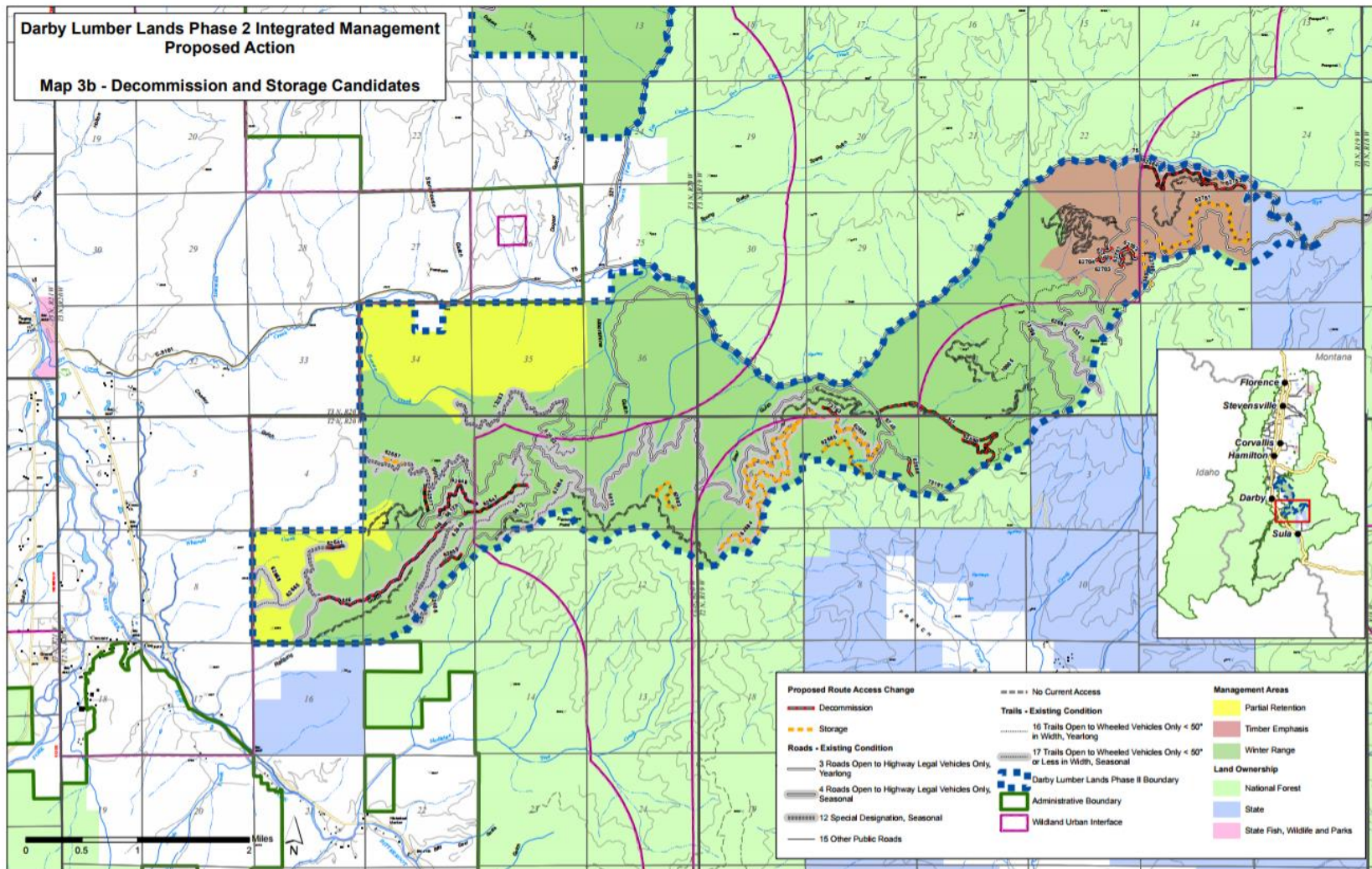
Map 2b. Proposed Access Change (South Half)



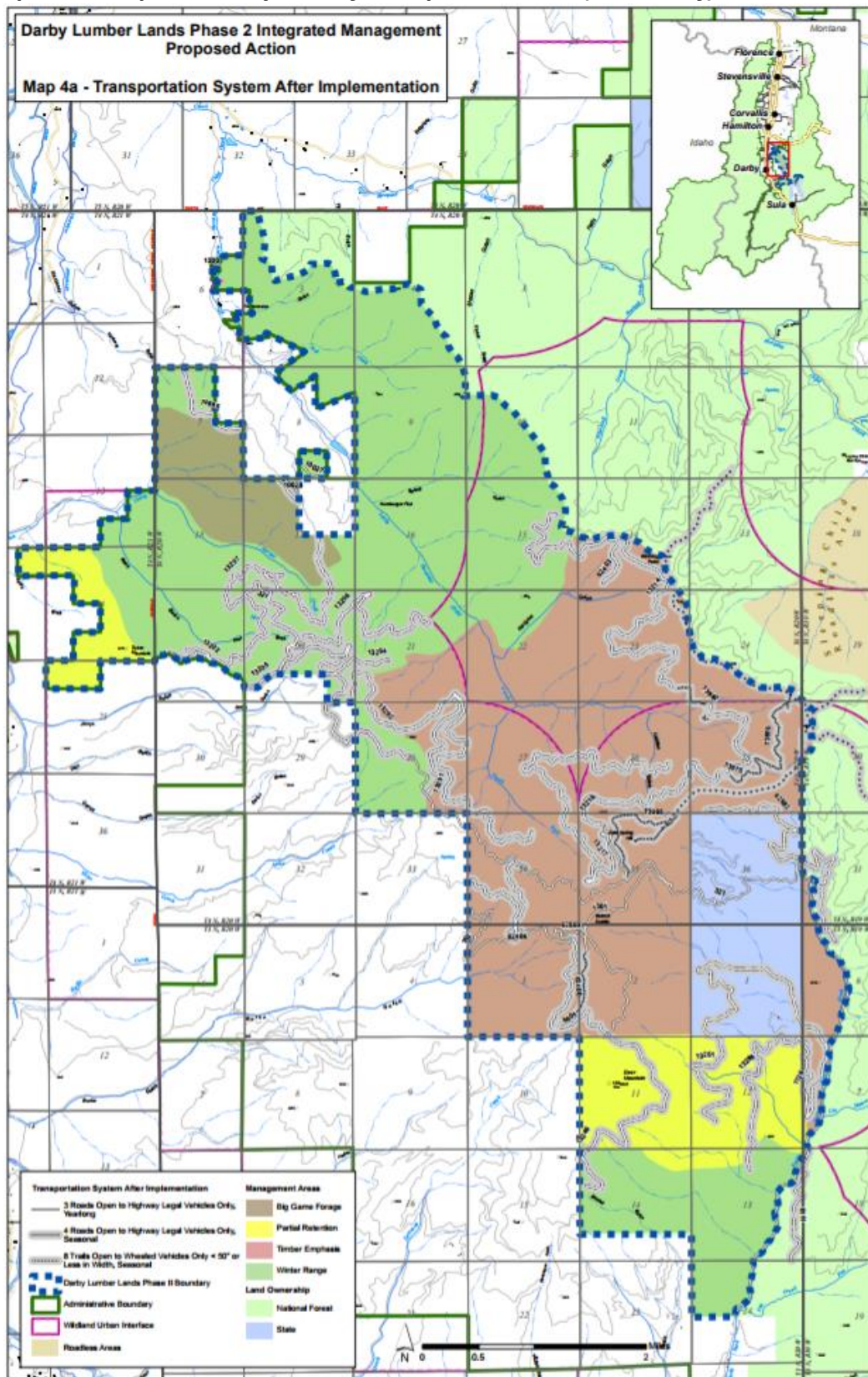
Map 3a. Decommissioning and Storage Candidates (North Half).



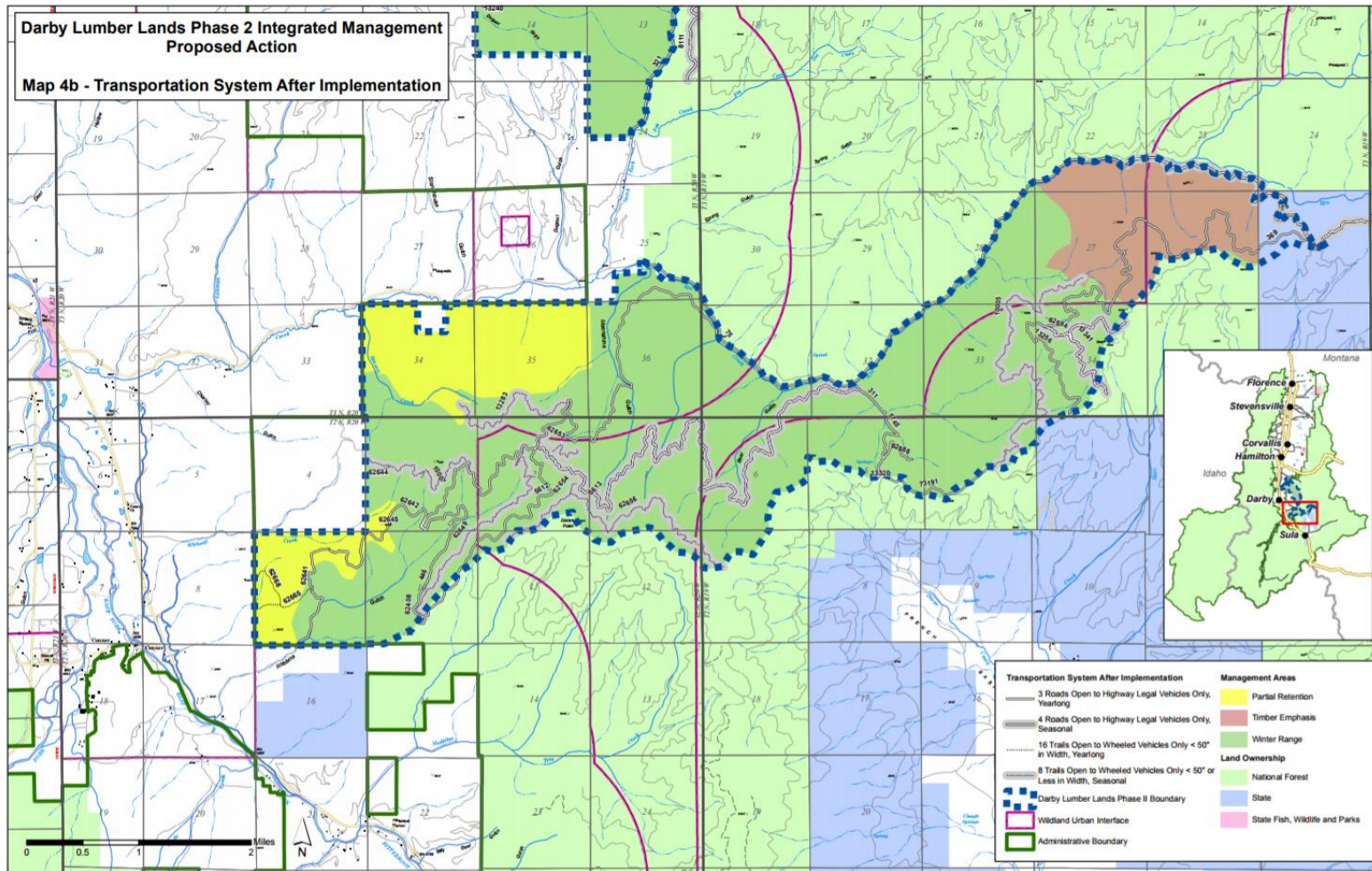
Map 3b. Decommissioning and Storage Candidates (South Half).



Map 4a. Transportation System After Implementation (North Half).



Map 4b. Transportation System After Implementation (South Half).



Appendix 2. Mapped Vegetation within the Analysis Area

Lifeform	Acres	% Total	Dominant Species	Acres	% Total	% Lifeform	Groups*	Acres	% Dominant Species
Trees	37,977	42.12							
			Ponderosa Pine	26,149	68.86	29.00			
							PIPO >60%	23,178	88.64
							PIPO-IMIX	2,971	11.36
			Lodgepole Pine	7,409	19.51	8.22			
							PICO >60%	5,933	80.08
							PICO-IMIX	1,476	19.92
			Douglas Fir	3,768	9.92	4.18			
							PSME >60%	1,535	40.72
							PSME-IMIX	2,234	59.28
			Sub-Alpine Fir	131	0.34	0.15			
							ABLA >60%	51	39.17
							ABLA-TMIX	62	47.09
							ABLA-IMIX	18	13.73
			Englemann Spruce	1	0.00	0.00			
							PIEN >60%	1	100.00
			Shade-intolerant mix	518	1.36	0.57			
							NA	-	-
Herbaceous	47,098	52.24							
			Transitional Forest**	27,822	59.07	30.86			
							NA	-	-
			Grass - Dry	18,995	40.33	21.07			
							NA	-	-
			Grass - Wet	408	0.87	0.45			
							NA	-	-
Shrubs	2,748	3.05							
			SHRUB-MESIC	639	23.26	0.71			
							NA	-	-
			SHRUB-XERIC	2,020	73.53	2.24			
							NA	-	-
Urban	865	0.96							
			NA	-	-	-			
Deciduous Trees	743	0.82							
			Cottonwood	739	99.41	0.82			
							NA	-	-
			Aspen	4	0.59	0.00			
							NA	-	-
Sparse Veg	511	0.57							
			NA	-	-	-			
Water	214	0.24							
TOTAL	90,156	100.00							

* Group codes are: PIPO = Ponderosa Pine, PICO = Lodgepole Pine, PSME = Douglas Fir, ABLA = Sub-Alpine Fir, PIEN = Englemann Spruce, LAOC = Western Larch, TMIX = mixture of shade-tolerant tree species, IMIX = mixture of shade-intolerant species.

**Transitional Forest are recently burned areas by stand-replacement fires which are currently dominated by herbaceous vegetation but are expected to transition back to forest through natural succession.

Appendix 3 NRLMD Compliance Summary

Darby Lumber Lands Phase II Project

Notes: **(1) For those areas identified as occupied lynx habitat in the *Occupied Mapped Lynx Habitat Amendment to the Canada Lynx Conservation Agreement* (USDA Forest Service et al. 2006), management direction are the standards and guidelines displayed below. As stated in the ROD (p. 29) unoccupied forests should consider this management direction.**

(2) Where superscript numbers (⁴³) appear, refer to the Glossary definitions on pages 11-15.

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>ALL MANAGEMENT PRACTICES AND ACTIVITIES (ALL)</p> <p><i>The following objectives, standards and guidelines apply to management projects in lynx habitat in lynx analysis units (LAU) and in linkage areas, subject to valid existing rights. They do not apply to wildfire suppression, or to wildland fire use</i></p>	
<p>Standard⁴³ ALL S1</p> <p>New or expanded permanent developments³³ and vegetation management projects⁴⁸ must maintain²⁶ habitat connectivity¹⁶ <i>in an LAU²¹ and/or linkage area²².</i></p>	<p>This Standard is applicable, and is met.</p> <p>The DLL II Project does not propose new or expanded permanent development. The project would maintain habitat connectivity in both LAUs. No lynx linkage areas have been identified in or near the project area.</p>

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>Guideline¹⁵ ALL G1</p> <p>Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways¹⁸ or forest highways¹² across federal land. Methods could include fencing, underpasses or overpasses.</p>	N/A
<p>Standard LAU S1</p> <p><i>Changes in LAU²¹ boundaries shall be based on site-specific habitat information and after review by the Forest Service Regional Office.</i></p>	N/A
<p>VEGETATION MANAGEMENT PROJETS (VEG)</p> <p><i>The following objectives, standards and guidelines apply to vegetation management projects in lynx habitat in lynx analysis units (LAU). With the exception of Objective VEG O3 that specifically concerns wildland fire use, the objectives, standards and guidelines do not apply to wildfire suppression, wildland fire use, or removal of vegetation for permanent developments like mineral operations, ski runs, roads and the like. None of the objectives, standards, or guidelines apply to linkage areas.</i></p>	
<p>Standard VEG S1 – Stand initiation structural stage limits</p> <p>Standard VEG S1 applies to all vegetation management⁴⁸ projects that regenerate³⁷ timber, except for fuel treatment¹³ projects within the wildland urban interface (WUI)⁴⁹ as defined by HFRA, subject to the following limitation:</p> <p>Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest).</p>	<p>This Standard is applicable, and is met.</p> <p>The DLL II project does not create any additional ESI structural stage in mapped lynx habitat.</p>

<p>Northern Rockies Lynx Management Direction</p>	<p>Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).</p>
<p>For fuel treatment projects within the WUI see guideline VEG G10.</p> <p>The Standard: Unless a broad scale assessment has been completed that substantiates different historic levels of stand initiation structural stages⁴⁴ limit disturbance in each LAU as follows:</p> <p>If more than 30 percent of the lynx habitat in an LAU is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects.</p>	
<p>Standard VEG S2 – Limits on regeneration from timber mgmt. projects</p> <p>Standard VEG S2 applies to all vegetation management⁴⁸ projects that regenerate³⁷ timber, except for fuel treatment¹³ projects within the wildland urban interface (WUI)⁴⁹ as defined by HFRA, subject to the following limitation:</p> <p>Fuel treatment projects within the WUI⁴⁹ that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest).</p> <p>For fuel treatment projects within the WUI⁴⁹ see guideline VEG G10.</p>	<p>This Standard is applicable, and is met.</p> <p>The DLL II project does not regenerate timber in mapped lynx habitat.</p>

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>The Standard: Timber management projects shall not regenerate³⁷ more than 15 percent of lynx habitat on NFS lands in an LAU in a ten-year period.</p>	
<p>Standard VEG S5 – Precommercial thinning limits</p> <p>Standard VEG S5 applies to all precommercial thinning³⁵ projects, except for fuel treatment¹³ projects that use precommercial thinning as a tool within the wildland urban interface (WUI)⁴⁹ as defined by HFRA, subject to the following limitation:</p> <p>Fuel treatment projects within the WUI⁴⁹ that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest).</p> <p>For fuel treatment projects within the WUI⁴⁹ see guideline VEG G10.</p> <p>The Standard: Precommercial thinning projects that reduce snowshoe hare habitat, may occur from the stand initiation structural stage⁴⁴ until the stands no longer provide winter snowshoe hare habitat only:</p> <ol style="list-style-type: none"> 1. Within 200 feet of administrative sites, dwellings, or outbuildings; or 2. For research studies³⁸ or genetic tree tests evaluating genetically improved reforestation stock; or 	<p>This Standard is applicable, and is met.</p> <p>The DLL II project does not include any precommercial thinning in mapped lynx habitat.</p>

<p>Northern Rockies Lynx Management Direction</p>	<p>Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).</p>
<p>3. Based on new information that is peer reviewed and accepted by the regional levels of the Forest Service and FWS, where a written determination states:</p> <ul style="list-style-type: none"> a. that a project is not likely to adversely affect lynx; or b. that a project is likely to have short term adverse effects on lynx or its habitat, but would result in long-term benefits to lynx and its habitat; or <p>4. For conifer removal in aspen, or daylight thinning⁵ around individual aspen trees, where aspen is in decline; or</p> <p>5. For daylight thinning of planted rust-resistant white pine where 80 % of the winter snowshoe hare habitat⁵⁰ is retained; or</p> <p>6. To restore whitebark pine.</p>	
<p>Standard VEG S6 – Multi-storied stands & snowshoe hare horizontal cover</p> <p>Standard VEG S6 applies to all vegetation management⁴⁸ projects, except for fuel treatment¹³ projects within the wildland urban interface (WUI)⁴⁹ as defined by HFRA, subject to the following limitation: Fuel treatment projects within the WUI⁴⁹ that do not meet Standards VEG S1, VEG S2, VEG S5, and VEG S6 may occur on no more than 6 percent (cumulatively) of lynx habitat on each administrative unit (a unit is a National Forest).</p>	<p>This Standard is applicable, and is met.</p> <p>The DLL II project does not affect any mature multistory forest in mapped lynx habitat, and does not reduce hare habitat within mapped lynx habitat.</p>

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>For fuel treatment projects within the WUI⁴⁹ see guideline VEG G10.</p> <p>The Standard: Vegetation management projects that reduce snowshoe hare habitat in multi-story mature or late successional forests²⁹ may occur only:</p> <ol style="list-style-type: none"> 1. Within 200 feet of administrative sites, dwellings, outbuildings, recreation sites, and special use permit improvements, including infrastructure within permitted ski area boundaries; or 2. For research studies³⁸ or genetic tree tests evaluating genetically improved reforestation stock; or 3. For incidental removal during salvage harvest⁴¹ (e.g. removal due to location of skid trails). <p>(NOTE: Timber harvest is allowed in areas that have potential to improve winter snowshoe hare habitat but presently have poorly developed understories that lack dense horizontal cover [e.g. uneven age management systems could be used to create openings where there is little understory so that new forage can grow]).</p>	
<p>Guideline VEG G1 – Lynx habitat improvement</p> <p>Vegetation management⁴⁸ projects should be planned to recruit a high density of conifers, hardwoods, and shrubs where such habitat is scarce or not available. Priority should be given to stem-exclusion, closed-canopy structural stage⁴⁴ <i>stands for lynx or their prey</i> (e.g. <i>mesic, monotypic lodgepole stands</i>).</p> <p>Winter snowshoe hare habitat⁵⁰ should be near denning habitat⁶.</p>	N/A

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>Guideline VEG G4 – Prescribed Fire</p> <p>Prescribed fire³⁴ activities should not create permanent travel routes that facilitate snow compaction. Constructing permanent firebreaks on ridges or saddles should be avoided.</p>	N/A
<p>Guideline VEG G5 – Habitat for alternate prey species</p> <p>Habitat for alternate prey species, primarily red squirrel³⁶, should be provided in each LAU.</p>	<p>This Guideline is applicable, and is met.</p> <p>The proposed project would retain abundant habitat for red squirrels in both LAUs.</p>
<p>Guideline VEG G10 – Fuel treatments in the WUI</p> <p><i>Fuel treatment projects in the WUI⁴⁹ as defined by HFRA^{17, 48} should be designed considering standards VEG S1, S2, S5, and S6 to promote lynx conservation.</i></p>	N/A
<p>Guideline VEG G11 – Denning habitat</p> <p><i>Denning habitat⁶ should be distributed in each LAU in the form of pockets of large amounts of large woody debris, either down logs or root wads, or large piles of small wind thrown trees (“jack-strawed” piles). If denning habitat appears to be lacking in the LAU, then projects should be designed to retain some coarse woody debris⁴, piles, or residual trees to provide denning habitat⁶ in the future.</i></p>	N/A.
<p>LIVESTOCK MANAGEMENT (GRAZ)</p> <p><i>The following objectives and guidelines apply to grazing projects in lynx habitat in lynx analysis units (LAU). They do not apply to linkage areas.</i></p>	
<p>Guideline GRAZ G1 – Livestock grazing and openings</p> <p>In fire- and harvest-created openings, livestock grazing should be managed so impacts do not prevent shrubs and trees from regenerating.</p>	This Guideline is applicable, and is met in most areas.
<p>Guideline GRAZ G2 – Livestock grazing and aspen</p> <p>In aspen stands, livestock grazing should be managed to contribute to the long-term health and sustainability of aspen.</p>	This Guideline is applicable, and is met in most areas.

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>Guideline GRAZ G3 – Livestock grazing and riparian areas & willow carrs</p> <p>In riparian areas⁴⁰ and willow carrs³, livestock grazing should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages²⁸, similar to conditions that would have occurred under historic disturbance regimes.</p>	<p>This Guideline is applicable, and is met in most areas.</p>
<p>Guideline GRAZ G4 – Livestock grazing and shrub-steppe habitats</p> <p>In shrub-steppe habitats⁴², livestock grazing should be managed in the elevation ranges of forested lynx habitat in LAUs²¹, to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.</p>	<p>N/A</p>
<p>HUMAN USE PROJETS (HU)</p> <p>The following objectives and guidelines apply to <i>human use projects, such as special uses (other than grazing), recreation management, roads, highways, mineral and energy development, in lynx habitat in lynx analysis units (LAU)</i>, subject to valid existing rights. <i>They do not apply to vegetation management projects or grazing projects directly. They do not apply to linkage areas.</i></p>	
<p>Guideline HU G1 – Ski area expansion & development, inter-trail islands</p> <p>When developing or expanding ski areas, provisions should be made for adequately sized inter-trail islands that include coarse woody debris⁴, so winter snowshoe hare habitat⁴⁹ is maintained.</p>	<p>N/A</p>
<p>Guideline HU G2 – Ski area expansion & development, foraging habitat</p> <p>When developing or expanding ski areas, foraging should be provided consistent with the ski area's operational needs, especially where lynx habitat occurs as narrow bands of coniferous forest across mountain slopes.</p>	<p>N/A</p>
<p>Guideline HU G3 – Recreation developments</p>	<p>N/A</p>

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
Recreation developments and operations should be planned in ways that both provide for lynx movement and maintain the effectiveness of lynx habitat ²³ .	
Guideline HU G4 – Mineral & energy development For mineral and energy development sites and facilities, remote monitoring should be encouraged to reduce snow compaction.	N/A
Guideline HU G5 – Mineral & energy development, habitat restoration For mineral and energy development sites and facilities that are closed, a reclamation plan that restores ³⁹ lynx habitat should be developed.	N/A
Guideline HU G6 – Roads, upgrading Methods to avoid or reduce effects to lynx should be used in lynx habitat when upgrading unpaved roads to maintenance levels 4 or 5, if the result would be increased traffic speeds and volumes, or a foreseeable contribution to increases in human activity or development.	N/A
Guideline HU G7 – Roads, locations New permanent roads should not be built on ridge-tops and saddles, or in areas identified as important for lynx habitat connectivity ¹⁶ . New permanent roads and trails should be situated away from forested stringers.	N/A
Guideline HU G8 – Roads, brushing Cutting brush along low-speed ²⁵ , low-traffic-volume roads should be done to the minimum level necessary to provide for public safety.	N/A
Guideline HU G9 – Roads, new On new roads built for projects, public motorized use should be restricted. Effective closures should be provided in road designs. When the project is over, these roads should be reclaimed or decommissioned, if not needed for other management objectives.	N/A. New roads would not be constructed within mapped lynx habitat.

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>Guideline HU G10 – Roads, ski area access</p> <p><i>When developing or expanding ski areas and trails, access roads and lift termini to maintain and provide lynx security¹⁰ habitat.</i></p>	N/A
<p>Guideline HU G11 – Snow compaction</p> <p>Designated over-the-snow routes, or designated play areas, should not expand outside baseline areas of consistent snow compaction¹, unless designation serves to consolidate use and improve lynx habitat. This is calculated on an LAU basis, or on a combination of immediately adjacent LAUs.</p> <p>This does not apply inside permitted ski area boundaries, to winter logging, to rerouting trails for public safety, to accessing private inholdings, or to access regulated by Guideline HU G12.</p> <p>Use the same analysis boundaries for all actions subject to this guideline.</p>	N/A
<p>Guideline HU G12 – Winter access for non-recreation SUP & mineral & energy development</p> <p>Winter access for non-recreation special uses, and mineral and energy exploration and development, should be limited to designated routes⁸ or designated over-the-snow routes⁷.</p>	N/A
<p>LINKAGE AREAS (LINK)</p> <p>The following objective, standard and guidelines apply to <i>all projects within linkage areas</i>, subject to valid existing rights.</p>	
<p>Standard LINK S1 – Highway or forest highway construction in linkage areas</p> <p>When highway¹⁸ or forest highway¹² construction or reconstruction is proposed in linkage areas²², identify potential highway crossings.</p>	N/A

Northern Rockies Lynx Management Direction	Is direction applicable to this project and has it been met (Yes or No and Met or Not Met)? Where direction is applicable but has not been met, explain the reason(s).
<p>Guideline LINK G1 – Land exchanges</p> <p>NFS lands should be retained in public ownership.</p>	N/A
<p>Guideline LINK G2 – Livestock grazing in shrub-steppe habitats</p> <p><i>Livestock grazing in shrub-steppe habitats⁴² should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages²⁸, similar to conditions that would have occurred under historic disturbance regimes.</i></p>	N/A